Self-serving behavior by investment bankers, controlling shareholders, and managers in M&A, dual-class shareholding, and IPO

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Article 1: The Value of your Advisor's Advice: An M&A Perspective.

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The Value of your Advisor's Advice: An M&A Perspective

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Abstract

The M&A advisory fee structure incentivizes bankers to induce corporation into closing larger and more numerous deals, while reputational considerations should prevent bankers from advising in favor of value-destructive acquisitions. We investigate whether pressures of losing market share compromise this trade-off. Our results point at the "fee generating" conflict in investment banking: advising banks that lose League Table positions have lower abnormal returns at bidding clients' acquisitions, lower probability of withdrawing deals that produced negative abnormal returns at announcement, and are more likely to advise on deals that are not anticipated by the market. The negative effect is stronger in magnitude among inexperienced bidders and recent IPO firms who retain the same investment bank, but is mitigated if more analysts follow the bidder. Using lagged and exogenous pressure variables we show that our results remain robust to reverse causality or omitted factors explanations. Our findings suggest that banks facing market pressures readily propose, advise and facilitate deals that are less profitable for their clients.

JEL Codes: G24, G34
Key words: Mergers&Acquisitions, M&A Advisory, Investment Banking Incentives

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1 Introduction

A large body of literature studies the determinants of the quality of corporate acquisitions. One question that greatly affects the welfare of shareholders is why M&A transactions lead to a decline in market valuations of bidders too often – as documented, for instance, in Moeller, Schlingemann and Stulz (2005). Existing literature often refers to misaligned managerial incentives and market overvaluation arguments when explaining the sources of inefficient acquisitions. In this work we study the role of investment bankers, – who act as advisors and deal executors in M&A transactions, – in the creation or destruction of value at acquisitions.

Analyzing a typical advisory fee structure yields interesting insights on the incentives of advisory teams. An investment bank's compensation is dominated by a success fee, which accrues to the bank only upon deal completion[1] and increases proportionately to deal size: a typical success fee is about 1% of a medium-size transaction value, and 0.5% for large transactions above $1 billion (see Giuliano 2010). This dominance of quantitative performance characteristics in advisory banking is further underscored by findings in Bao and Edmans (2010): low abnormal returns at acquisitions are persistent across banks, but potential clients do not seem to choose banks based on the quality of deals advised in the past. The authors show that the strongest factor driving future M&A market shares is a bank's current League Table position, which makes it optimal for bankers to readily advise even in favor of value-destructive acquisitions.

The main idea of our paper is that banks have misaligned incentives when putting forward or evaluating potential M&A deals: bankers may recommend an acquisition to their clients even when it is likely to become a failure for the bidder. We conjecture that this conflict becomes particularly severe when banks are under pressure to boost M&A advisory fees or market share: banks may more aggressively trade-off client interests for additional M&A fee revenue from deals

[1] If a deal is not completed, the advisory bank receives only unconditional parts of compensation: expense reimbursements (such as bankers' airfare and accommodation) and in some cases a retainer fee. Both are much smaller than the success fee.

that do not create value for the acquiring firms. We test this conjecture by examining whether the decline in advisory banker's M&A business negatively affects the acquisition outcomes of bidding clients. We refer to banks that experience a deterioration in their M&A League Table rank as *conflicted* banks, as such banks may be more inclined to provide *aggressive* advice in the sense of higher propensity to recommend the completion of value-destroying deals.

Our analysis proceeds along the following lines. First, to assess how bankers' incentives impact the quality of proposed deals, we test whether declining M&A business negatively affects acquisition outcomes as measured by announcement cumulative abnormal returns. Second, to analyze how advisory incentives impact the termination probability of potentially suboptimal deals, we investigate the withdrawal frequency for deals that had negative abnormal returns upon announcement. We additionally assess how the presence of analyst coverage affects both the quality and withdrawal probability of acquisitions. Third, we investigate how bidder and target pre-announcement run-ups, as well as the method of payment in acquisitions, vary according to the incentives of the bank advising the bidder. Finally, we extend our analysis to the issue of existing relationships between the bank and its clients established at the time of the IPO. We address potential endogeneity concerns by using alternative specifications of the pressure variables to rule out alternative explanations that reverse causality or omitted factors may drive our results.

Our findings demonstrate that the negative dynamic of an advisory bank's M&A business does lead to worse acquisition outcomes. In particular, as the pressure on investment banks gets stronger, 1) the quality of advised acquisitions declines, 2) the probability of withdrawing low quality deals (with negative CAR) decreases, and 3) deal announcements come more often as a surprise to the market (associated run-ups are less positive for the target and less negative for the bidder). The results on the lower quality of more conflicted acquisitions increase in magnitude when the sample is constrained to bidders with no previous acquisition experience or recent IPO firms, which suggests that when dealing with less experienced firms, banks may

have stronger leverage to impact acquisition-related decisions to their own advantage. In contrast, the link between bankers' misalignment and lower acquisition quality is weakened if more investment analysts are covering the bidder, which suggests that when there is a stronger potential reputational loss due to advising on badly performing acquisitions of well-covered bidders banks may be less aggressive with their advice. Finally, if an advisory bank is more conflicted, a stock payment is more often used, in which case it is possible to finance transactions with less monitoring by outside suppliers of capital.

The economic effect of misaligned incentives in advisory banking is substantial. We estimate that a conflict in advisory banking leads to a decline in acquisition abnormal returns of i) 0.6% in the whole sample, ii) 1.2-1.8% for acquisitions performed by younger and less experienced bidders, and iii) 5-7% for acquisitions of recent IPO companies that retain the same advisor for both underwriting and acquisition transactions. The corresponding dollar value change at acquisitions is -$78 mil in the broad sample of acquisitions and -$46 mil among inexperienced bidders. These dollar loss estimates exceed by orders of magnitude a typical M&A fee of $5 mil for an acquisition of average size in our broad sample, which suggests that misaligned incentives in advisory banking impose large costs to the economy.

Our results complement a growing literature on conflicts of interest within investment banks by demonstrating that distorted bankers' incentives negatively influence acquisition outcomes of their bidding clients. Overall, our findings suggest that imperfect contracting between bankers and corporate clients, along with misaligned managerial incentives documented in the literature, can be an important factor leading to wealth destruction at acquisitions, which should be addressed in the industry practice.

The remainder of the paper is organized as follows. Section 2 discusses the incentives of investment bankers in M&A advisory and outlines our research hypotheses. Section 3 describes the data. Section 4 analyzes the relationship between bank's M&A position and the quality of advised acquisitions, as well as other acquisition characteristics. Section 5 provides robustness

tests to address alternative explanations. Section 6 concludes.

2 Misalignment of Banks and its Implications for Acquisition Quality

Many investment banking activities conceivably can have serous incentive misalignment, whereby aggressively pursuing profitable activities may more than outweigh the benefits of serving the client's best interests. Reputation can be a strong mechanism to align bankers' incentives with those of the client, but the effect of reputation does not seem to be sufficient, as we review below. Instead, banks, as profit maximizing entities, are likely to determine an optimal trade-off between pursuit of higher profits, which may involve excessively aggressive and potentially inappropriate ways of generating revenues (e.g. via biased research coverage or nontransparent fee schemes), and serving the interests of the client, which should improve the bank's reputation.

With regard to advisory services, Morrison and Wilhelm (2007) note that as the value of reputational capital diminished over the last thirty years, bankers have had incentive to exploit their reputation while it lasted, by selling inappropriate and expensive products to customers who were still prepared to trust them. The problem of neglecting reputation was central to the decline of Bankers Trust, where employees showed little concern for the long-term reputation of the firm in 'aggressive pursuit of profits' that resulted in several scandals and reputational losses the bank has not been able to sustain.[2]

Besides the reputation of the bank that affects its franchise value, the personal reputation of bankers may be an important incentive factor at least in some areas of investment banking. Fung and Yasuda (2008) show in the context of research analysts that bank reputation does improve overall forecast quality, but personal analyst reputation concerns are more important for the

[2]Morrison and Wilhelm (2007: 247-249).

provision of unbiased investment advice. As the authors report, during the high-tech bubble period, analysts with low personal reputation who worked at reputable banks decreased research quality most dramatically, which benefited the underwriting divisions of banks. Intuitively, such analysts had most to gain (massive capacity of their banks to generate underwriting revenues, which translated into higher bonuses) and least to lose (low personal reputation).

However, the M&A advisory industry does not seem to feature any comparable personal reputation mechanisms as the analyst coverage industry does (an *All-American* award for individual "star" analysts). Instead, purely quantitative measures of advisory team performance, such as League Tables published by Thomson Financial and other providers, are widely used as means of assessing qualification of banks in particular advisory areas. Not surprisingly, in order to propel career growth and earn hefty bonuses it is very important for each banker to have large acquisitions in their track record. As a former M&A executive of two major investment banks writes, "Bankers gain stature within organization by being associated with large, important transactions...[which] refers to both the value paid and fee collected."[3] The result of the incentive structure geared towards quantitative performance can be indeed quite noticeable. The survey of UK bidders by Hunt, Lees, Grumbar, and Vivian (1987) showed that some acquirers felt they were hustled into closing the deals, were dissatisfied with bankers' excessive orientation towards deals and fee earning, and that banks featured 'scoring points' against each other in amicable deals.[4]

Our work contributes to the two strands of literature related, on the one hand, to suboptimal acquisition decisions that lead to value destruction and, on the other hand, to conflicts of interest in investment banking. The first line of literature analyzes inefficient actions of corporate management leading to value destruction, which is reflected in negative stock price reactions. Established theories, most prominently Jensen (1986), argue that excess cash flow

[3]See an entertaining account on the author's career in M&A advisory business *The Accidental Investment Banker* by Jonathan Knee (2006).

[4]See Sudarsanam (1995: 114).

and managerial misalignment result in empire building problems.

It is interesting to uncover the structure and the sources of inefficiencies in M&A transactions. According to Moeller, Schlingemann and Stulz (2005) the vast majority of acquisitions creates value for shareholders, as measured by a three day abnormal market return. However, since a relatively small number of the disproportionately large and inefficient acquisitions outweigh the non-value destroying ones, total wealth change in all acquisitions is negative (for example, these authors estimate the total loss to acquiring firm shareholders to be $240 billion during 1998-2001). In light of the first line of literature, these inefficiencies are due to the fact that corporate managers do not serve shareholders' interests, but instead focus on pursuing private benefits of control. In particular, Jensen (2005) remarks that managers of large corporations with high valuations have enough discretion to make poor acquisitions after they have run out of good ones. This raises the question of whether managers are solely responsible for such value destructive actions and why corporate governance does not respond with efficient control mechanisms specifically in case of large companies.

The widespread use of option-based compensation in recent years allows for a better alignment of managerial incentives and shareholders' interests. While these incentive mechanisms should ideally encourage managers to choose only those acquisitions that create value for the acquiring company, Harford and Li (2007) show that corporations with poor corporate governance grant to executives additional stock-based compensation following even unsuccessful acquisitions.[5] Thus, managers may receive direct monetary compensation for executing suboptimal acquisitions – on top of perquisite consumption and personal satisfaction from managing 'empires'.

A very important point to raise here is that the role of acquisition originators and executors

[5] According to Harford and Li (2007) and Grinstein and Hribar (2004), excessive influence of executives on compensation committees may lead to the failure of incentive-based compensation in M&A setting: executives were shown to receive new sizable cash and stock-based compensation following acquisitions, offsetting possible declines in old options value.

is usually delegated by corporate executives to investment bankers, and that banks receive hefty acquisition advice fees, which are typically contingent on deal completion. M&A teams of investment banks play a key role in evaluating the efficiency of possible acquisitions that are under consideration of corporate executives. This gives us ground to conjecture that managerial misalignment might not be the only factor accounting for inefficiencies observed. At this point, we refer to the second line of literature that documents mounting evidence of conflicts of interest within investment banking, where numerous papers show examples of imperfect contractual relationship, in which bankers may put their own profits ahead of clients' interests.

We quickly review examples from the existing literature to motivate our main hypothesis that misaligned bankers may push their corporate clients into value-destructive acquisitions. An abundant literature analyzes the conflict of interest in an underwriter setting, where banks may benefit from keeping offer prices low to boost brokerage commissions. Initially the dominant view was that better underwriter reputation reduces the uncertainty related to a new stock becoming public, as higher prestige underwriters provide more professional services and have valuable reputation to sustain. However, findings in Michaely and Womack (1999), Ljungqvist, Marston and Wilhelm (2009), and Chemmanur, Hu and Huang (2009) amongst other papers, suggest that large banks have accumulated considerable reputational capital and can now take advantage of their market power when providing investment recommendations on potential underwriting clients or determining IPO offer prices.

Thus, bankers seemed to boost, on the one hand, their underwriting revenues at the expense of the investment research subscribers, and, on the other hand, their brokerage commissions from institutional investors at the expense of their IPO clients. Such a "gift exchange" has triggered several discreditable investigations on inappropriate investment research, IPO allocations and brokerage practices, including the "Global settlement" that involved ten major investment banks.

Referring to the role of analysts employed by banks advising on M&A transactions, Haushalter and Lowry (2010) show that if banks receive a higher proportion of revenues from investment

banking, their analysts tend to issue more positive recommendations on acquirers around acquisitions advised by their banks, which is similar to numerous findings in the IPO literature on optimistic analyst coverage as a mean of winning underwriting mandates. They further show that affiliated asset management divisions seem to recognize potential conflicts and rely on analyst recommendations to a higher degree when perceived conflicts are less severe.

On the client side of the M&A advisory business, corporate managers seem to neglect such important information as investment banks' previous advisory experience and the realized quality of advised acquisitions. Bao and Edmans (2010) show that even if banks underperform in acquisition quality, they can nevertheless improve their M&A rankings if they perform well in terms of deal volume. They find that the abnormal return (as well as its residual part unexplained by deal characteristics) is persistent for individual banks over time. In other words, some banks have persistently negative quality of advised deals, but corporate executives do not seem to base their advisor choice on bank-specific acquisition performance. Other potential quality measures, such as acquisition success rate or time to completion, do not appear to be substitutes for the quality of acquisitions as evaluated by the market return. The authors show that high abnormal returns at advised acquisitions do not improve a bank's competitive position, while the most important driver of future advisory market share is current market share. This striking result underlines the importance for bankers of the size and number of deals advised, and indicates that reputational concerns may not be the first priority when advising in favor of proposed acquisitions.

On the inside information aspect of the conflict of interest pertaining to universal banks, Bodnaruk, Massa and Simonov (2010) show that investment banks benefit from superior information that M&A divisions have regarding takeover plans by changing stakes (through proprietary trading divisions) in advised bidders and their targets. Moreover, the outcome and profitability of takeover attempts are altered due to banks' indirect participation. As a result, banks earn lucrative returns, while the performance of bidding firms in acquisitions is poor. These results indicate

that managerial hubris and empire building are not the only factors driving value destruction in acquisitions. As Bodnaruk et al. suggest, bankers exploit managers' bidding ambitions to their own advantage, which justifies our hypotheses. From a different prospective the issue of bankers' misaligned incentives is underscored in Guner, Malmendier and Tate (2008), who show that the presence of investment bankers on corporate boards is associated with the undertaking of poorly performing acquisitions.

These findings are in contrast to a more traditional view that "reputations are hard to build and they are the source of all of the investment bank's profits".[6] A possible explanation is that in the new era of standardized and depersonalized banking, reputation is no longer associated with a successful track record of deals and personal experience, but rather with a position in widely publicized market rankings and reviews. Thus, the position in the League Tables seems to be perceived by executives as a key measure of advisor's quality, and CEOs may use it to easily choose top banks in order to show shareholders that they 'did their best' when preparing an acquisition, referring to the certification role of 'leading banks'.

Similarly to the results in Fung and Yasuda (2006), misaligned incentives within advisory banking may also have roots in the personal interests of investment bankers. An M&A team considering a potentially inefficient acquisition may be tempted to trade off the bank's reputation with their own bonuses at the end of the year. Of course, banks' inflated fee targets and their philosophy of struggling for the leadership in the M&A league tables have the same direction of influence, and we aim to capture the joint effect of conflicts within M&A advisory banking.

That is, on the one hand, banks' reputation concerns should help to align advisors' incentives with those of the acquirer. On the other hand, the motive of increasing an advisory teams' bonuses and banks' desire to advance in the League Tables via doing larger and more numerous deals, drastically diverge with the value-creating interests of acquirer's shareholders. On top of that, personal career concerns may induce bankers orchestrate large acquisitions, as this is one of the key measures of bankers' usefulness to a bank. Thus, the incentive structure of advisory

[6]Morrison and Wilhelm (2007: 92)

teams seems to be strongly dominated by quantitative characteristics of performance rather than by the quality of acquisitions.

To sum up, until the last two decades, the opportunity to abuse oligopolistic power of major banks[7] seemed to be balanced by the tendency of establishing long-term relationship and by the practice of maintaining a one bank-one corporation client structure,[8] that created sufficient reputation building incentives for banks. This balance deteriorated with the weakening of relationship banking in the 1990s and following the repeal of the Glass-Steagall act that released new competitive forces into the M&A advisory business from the side of commercial banks, intensifying the competition for the pool of profitable acquisitions in the economy. The emergence of a large number of new participants in the M&A advisory sector coupled with drastically increased turnover amongst advisory banking professionals[9] weakened the motives to build long-term reputation and increased the shortsightedness of investment bankers, making the race for fees perhaps the dominant driving factor in the industry.

The main aim of our paper is therefore to test whether investment bankers, acting as experts and advisors in M&A, can take advantage of their influence on corporate executives by encouraging them to undertake "bad" acquisitions – along with value-creating ones – due to the conflict of interests and "fee generating" motive. In this case Jensen's (2005) hypothesis can equally apply to investment bankers: if there is scope for abusing one's influence on corporate managers, the bankers may start pitching value-destroying acquisitions once they run out of value-creating ones.

[7]Hayes et al. (1988): investment banking exhibited an oligopolistic industry structure... [dominated by] a handful of powerful firms. See Anand and Galetovic (2006).

[8]See Eccles and Crane (1988: 53-54).

[9]The last two decades witnessed several episodes of whole advisory teams changing the employer. An eye-catching example was the move in 1988 of star-bankers Wasserstein and Parella followed by 21 banker, who left First Boston with a handful of major clients. See Morrison and Wilhelm (2007: 285-286, 307).

2.1 Testable Hypotheses

The main task of this paper is to analyze the influence that M&A advisors have on the quality of acquisitions of their bidding clients. We analyze the pressure which banks may be exposed to due to their declining competitive position in the M&A market, where pressure is defined as a decline in the volume of advised deals or in M&A market share.

Investment banks, whose advisory market share is falling relatively to previous period, are more eager to catch up in their competitive position, and thus may have a stronger incentive – ceteris paribus – to win advisory mandates. In this situation a bank can start to (marginally) trade-off its own short-term benefits (such as League Tables position improvement and advisory fees) for the quality of advisory services provided to clients. In this paper we refer to such banks pressured by the market as more *conflicted* or *misaligned*. Empirically, we expect that firms hiring more conflicted banks will perform acquisitions with lower announcement returns, thus destroying more value in acquisitions. To capture the pressure of M&A market dynamics on investment banks, we use the U.S. M&A deal volume and market share as reported in the SDC Platinum M&A League Tables. These variables capture how successfully an M&A advisory team performs, and our conjecture is that during the periods of falling M&A revenues a bank's advisory team is under stronger pressure to generate advisory fees.

We expect that for a banker the opportunity to promote acquisitions is better if a client firm has a smaller acquisition experience, thus we will repeat our tests in a subsample of firms which did not engage in acquisition during three years prior to a given acquisition announcement (referred to as *inexperienced bidders* sample, in contrast to the *broad* sample). Finally, we also investigate how misalignment of banks influences the quality of acquisitions in *relationship advisor* sample, where firms are characterized by both a lack of experience and the existence of relations between firms and investment banks. To capture the established relationship, we restrict our sample to firms that make acquisitions within up to three years upon going public and that hire their former IPO underwriter as their M&A advisor.

Besides analyzing the effect of misalignment on acquisition abnormal returns, we additionally explore how misalignment affects the withdrawals of deals with negative abnormal returns at announcement and other aspects of acquisitions.

Our analysis can be formalized in a set of testable hypotheses:

H1. CAR at acquisitions advised by more conflicted banks are smaller.

This hypothesis formulates the conjecture that an investment bank hired as an M&A advisor plays an important role in acquisition-related corporate decisions and has an opportunity to put significant pressure on corporate executives to acquire aggressively, and that more conflicted banks presumably do so more often. Given the scarcity of value-creating acquisitions, some of the transactions suggested by the bank are suboptimal and do not create value for the acquiring firm's shareholders. As the variable capturing the pressure to generate more M&A advisory, we employ two specifications of dummy for a negative change i) in total dollar volume of deals advised by the bank, or ii) in the bank's market share. As a decline in volume of deals (relatively to previous period benchmarks or competitors) endangers both the bank's position in the League Tables, and the bonus pool of the M&A division, we expect that bankers will be more likely to pressure their clients into more transactions, and client's wellbeing is more likely to be traded off for bank profits. Thus, we expect that a decline in a bank's competitive position will be associated with lower abnormal returns at acquisitions, and we investigate the influence of the misalignment of incentives in both the broad and the inexperienced samples.

The next hypothesis investigates whether the current pressure variables affect the odds of withdrawing acquisitions that were negatively perceived by the market (with negative abnormal returns at announcement). The idea here is that if acquisition advisors are under higher pressure to generate deals, they will be more eager to persuade the acquirer to complete an acquisition even if the market discourages the firm from doing so, which would result in a lower incidence of subsequent withdrawals conditional on negative abnormal returns at announcement.

H2. Negative CAR deals are withdrawn less frequently if advisors are under the pressure of

falling M&A market share.

We should note that completion frequency is perceived as one of the quality features in an advisor's work: if a corporation engages into a costly and time-intensive acquisition negotiation process, it views higher completion frequency as one of the quality characteristics of an investment bank's work (see Bao and Edmans, 2010, who treat completion rate and speed as alternative quality characteristics in M&A advisory, besides announcement returns). However, completing acquisitions that the market responds to with a negative stock price reaction begs the question of whether executives and bankers aim at pursuing their own interests instead of maximizing shareholder value. Thus, we investigate how the withdrawal probability is affected, conditional on negative CAR at announcement.

We additionally test hypothesis H1 and H2 along the dimension of covering investment analysts, whereby we interact the explanatory variable capturing the conflict with the number of analysts covering a bidder's stock.

Finally, we posit the auxiliary hypotheses on other characteristics of acquisitions.

H3. Deals are initiated more unexpectedly and thus pre-announcement run-ups are smaller in magnitude if advisors are under higher pressure due to a deterioration of their M&A ranking.

This hypothesis reflects the fact that if deals are motivated by the desire of advisory teams to generate fees, rather than by an economic or strategic rationale, the deals will be less likely to be expected by the market. The alternative interpretation would involve the insider trading aspect, according to which more conflicted banks (with conflicting interests in different departments) could engage into speculative trading before an acquisition announcement. We discuss this issue in the related section below.

H4. Deals are more likely to use stock consideration if advisors are under higher pressure of their M&A market position.

Hypothesis four reflects the fact that using stock payment in acquisitions can solve the problem of finding a funding source for the acquirer, and thus may make acquisitions possible

even if no other party is ready to provide financing for a bid and if internal funding is insufficient. Additionally, the argument of stock financing can be used to persuade management to acquire other firms by appealing to the temporary overvaluation of the stock, which is subjective and hard to verify issue.

Finally, we address the issue of conflicted incentives in the setting of established relationship between corporate management and investment banking teams. Morrison and Wilhelm remark that M&A advisory work rests almost exclusively upon relationship and market information.[10] In order to capture the existence of close relationship between advisors and managers, and thus the possibility to abuse this access to corporate executives, we also repeat out tests in a setting where important business links exist between advisors and executives before an acquisition. The dimension under focus is established close relations with firm management through underwriting its IPO.[11]

To give an intuitive example, we can consider a firm that goes public with a bank which has substantial M&A business. Such a bank would actively seek potential takeover combinations for its former IPO client and would be particularly eager to promote these. Existing evidence shows that firms tend to keep underwriter in future transactions.[12] Thus, our conjecture is that after conducting an IPO, the bankers will more frequently contact firm executives to pitch possible takeover targets and propose advisory services, and in general will have an opportunity to abuse this preferential access to management, as well as superior knowledge of firm-specific information. Such an opportunity to abuse may be exploited by more conflicted banks once a "hot" deal

[10]Morrison and Wilhelm (2007: 90).

[11]Relationship between investment banks and firms provide banks with access to firm-specific information that can be used to structure deals. (As Crane and Eccles (1993: 131-136) describe, without such relationship and information, the banks would be 'making virtually random blue-book pitches with little chance of hitting the target'.) On the other hand, prior relationship, particularly those established through an IPO, is a primary reason for choosing an investment bank (Anand and Galetovic (2006)).

[12]James (1992) shows that following IPO 72% of firms retain the same bank for the next stock issuance; for debt offerings, 65% of issuers do not switch banks.

appears on the horizon. More specifically, a deal that promises high fees to the investment bankers, even without prospects of increasing shareholders' value, can be deliberately advertised to the former IPO client and it will have higher chances of being initiated by a relationship bidder. Similarly, in case of client-initiated deals, a conflicted advisory team enjoying higher level of trust will also be in a better position to facilitate deal completion, even if investment bankers perceive the low quality of the proposed transaction. To assess the effect of misalignment in this setting, we will test this extended version of hypothesis *H1.b* on a sample of firms that announce acquisitions soon after going public and who retain the same investment bank for M&A advisory services (acquisitions with a *relationship advisor*).

As pressure metrics, we construct dummy variables capturing change in M&A deal value and market share values relatively to the previous year in order to capture the pressure on advisory teams to "chase deals": if a bank's M&A business is declining, the bankers face prospects of having lower or no bonuses at the end of the year, and potentially face prospects of being fired, while the bank is losing its position in the League Tables; thus, the eagerness to promote acquisitions 'whatever it takes' and misalignment. Previous year level of M&A revenues (or market share) is taken as reference point in our main specifications, as last year performance is the most natural and readily available benchmark for investment banks. Obviously, banks whose advisory business is exhibiting upward sloping trend will set higher targets for consecutive year, but clearly what hurts most is losing the market share to competitors. Hence, we employ previous year levels as a natural benchmark and code dummy variables of negative change in M&A market value (alternatively, share) relative to the previous period.

In order to measure the efficiency of acquisitions, we employ the standard measure of cumulative abnormal returns at announcement, which allows us to capture the wealth change to acquiring firm shareholders. We are concerned primarily with the change in acquiring firm valuation, thus, we do not measure the change in the combined market valuation of the bidder and the target. Our main task is to unravel how advisory bank's incentives affect its client's

performance, so we do not analyze additional issues of combined wealth change or wealth redistribution between shareholders of the two companies, for example due to the hubris hypothesis or overconfidence. We control for customary deal characteristics, accounting and valuation variables.

In the next section we describe our data sample and the variables employed to capture the effect of the "deal generating" phenomenon within investment banks, and in subsequent section we report the empirical results.

3 Data and Variables

Our paper examines the differential in the quality of acquisitions depending on the incentives of the investment bank, which is hired by a firm as its M&A advisor. Our initial dataset includes all U.S. acquisitions announced between 1990 and 2008. We restrict the datasample to those transactions that result in the increase in ownership by the acquirer from below 50% to above 50%. In most cases, the acquisitions in our sample are characterized by the acquisition of 100% ownership in the target.

The acquisition-related data are taken from the M&A section of SDC Platinum database. To test our hypothesis H1 in the relationship advisor sample, we also track all acquisitions made by recent IPO firms performed within a period of up to three years following an IPO, and check whether the identities of the underwriting bank and the subsequently hired advisory banks are the same. Relevant IPO data come from the IPO section of SDC database. We use stock and index returns data from CRSP tapes, as well as additional firm-specific data from Compustat database: total assets, common equity, shares outstanding, sales, cash holdings, income, and debt. Our broad sample includes 2944 acquisition announcements with complete stock and accounting data.

The following two variables capture a potential pressure that an advising investment bank

may be subject to: (i) the yearly change in dollar volume of all U.S. acquisitions credited to the investment bank, and (ii) the change in the U.S. M&A market share. To keep the sample size manageable and at the same time have a sufficient number of observations for each bank, we first determine the list of banks that belonged to top 50 by the total volume of advised deals in a period of either 1990-1999 or 2000-2009. We carefully track acquisition records between investment banks over this period, and add up U.S.-related M&A revenues when the same bank appearing in historical SDC tables under different names in a given year. Yearly M&A deal values and market shares are from SDC Platinum M&A database League Tables. We calculate the yearly change in advisory deal volume and market share for these banks for all years of the sample period.

To construct additional metrics for the robustness tests, we follow a similar methodology to calculate the quarterly metric (both dollar value of acquisitions and advisory market share) for the lagged performance over recent quarters. Quarterly changes are more volatile than their yearly counterpart, and to capture an evolving dynamic of advisory incentives over the course of deal origination and structuring, we calculate the change in the market position over the two most recent years excluding the deals performed in the current quarter (we discuss this alternative specifications in more detail in the robustness section). Additionally, we draw on performance measures from BankScope to construct exogenous variations in banking income. We use reported net earnings and trading income, where the former is used to construct a residual income part, which is unexplained by M&A market performance, while the latter is directly employed as a measure of 'exogenous' pressures that M&A teams may be subject to. We discuss these variables in details in subsection 5.2.

As a measure of value-creation at acquisitions we use the cumulative abnormal return over a three-day window at acquisition announcement dates, where the value-weighted CRSP raw return is used as benchmark in the baseline specification.

Finally, we calculate for each year the number of analysts following a bidder's stock, as re-

ported in the IBES database. For any given acquisition, we use the number of analysts following the stock in a previous year (since the number of analysts in a given year could potentially increase following a successful acquisition, we prefer to use the previous year's coverage).

Descriptive statistics for the 2944 acquisitions of the broader sample are reported in the first two columns of Table 1, while the last four columns offer a comparison among acquisitions depending on the competitive position of the advisory bank (increasing versus declining value of all acquisitions advised). We find that abnormal returns in the whole sample have a positive mean and a positive median, but the change in bidder capitalization has a negative mean and is negatively skewed. This parallels the results in Moeller et al (2005), who show that despite positive mean abnormal returns, the combined dollar change in acquisitions is negative due to negative skewness in dollar change at acquisitions. In our sample, the bidder CAR is smaller (with significant mean difference) and bidder capitalization change is more negative (median difference test is significant) in the subsample of acquisitions advised by misaligned banks.

In addition, we find that the average bidder pre-announcement run-up is negative, the mean target run-up is positive, and both types of run-ups are less pronounced in subsamples of conflicted advisors. Acquisitions advised by misaligned banks are associated with a somewhat lower probability of withdrawing deals that had negative announcement CAR, and the withdrawal probability is also smaller if we do not condition on CAR, but in both cases the difference is insignificant. Cash-based consideration is less frequently used in acquisitions advised by banks that have a declining M&A advisory business. As for accounting variables, we see that firms that use the advisory service of misaligned banks are characterized by higher capitalization, larger assets and sales, lower recent sales growth and a somewhat lower return on equity (albeit this latter difference is insignificant). Finally, premiums in such acquisitions tend to be higher.

As we see, the univariate comparison results hint at a higher incidence of lower quality acquisition decisions if the advising bank faces higher pressure to generate M&A revenues. In the next section we investigate the drivers of these inefficiencies and find evidence suggesting

that misaligned incentives of investment bankers contribute to poor performance at acquisitions.

4 Empirical Methodology and Results

This section presents our identifying strategy of capturing the effect of M&A market pressure on the quality of acquisition advice, and reports our empirical findings. The ideal way to quantify the effect of this pressure would be to compare outcomes of acquisitions advised by banks in otherwise identical settings, where the only difference in the incentive structure would stem from an exogenously driven shock to the competitive position of each bank. As long as an advisory team is subject to the shock at the time of providing its advice, conducting due diligence and negotiations with a (potential) target,it may have an incentive to favor the completion of all – even value destroying – acquisitions. Biased advice would on average translate into lower abnormal returns at otherwise identical acquisition announcements, and we would have a direct evidence of conflict in advisory banking due to competitive pressures on individual banks. Clearly, an ideal specification is hardly ever achievable beyond the control experiment setting, and we discuss below what issues the departures from a desired benchmark specifications pose.

In our main specifications that test H1 in the next subsection, the outcome variable is the abnormal return at acquisitions, and the key explanatory variable is the dummy of advisory bank losing its market share position (where the latter is either in dollar value of advised acquisitions or in market share units). It is conceivable that acquisitions with large negative returns, particularly if they attract the attention of the media or corporate executives, may lead to declines in future advisory market shares. This poses a concern of the reverse causality effect. We discuss in the Robustness section that our results in alternative specifications with lagged explanatory variable, as well as the timing of a typical acquisition preclude this alternative explanation from driving our results.

Unobserved variables, in particular changes in investment bankers' skill, are also an impor-

tant concern in this setting. We present our exogenous pressure results in the Robustness section that help to rule out an alternative interpretation that our findings are due to the changes in unobserved quality of banking professionals.

4.1 Deteriorating advisory incentives and acquisition quality

We first present our results from regressing acquisition returns on the conflict variable of advisory bank, we then explore another aspect of acquisition quality, namely the withdrawal frequency of potentially suboptimal deals. Our measure of conflict in advisory banking captures fluctuations in banks' M&A competitive positions over time. We calculate annual changes in each M&A advisor's market share and deal volume. These variables capture the changes in bankers' incentives: firstly, the utmost goal of each advisory banking team is to increase its ranking in the League Tables, as this measure turns out to be a key statistic used by banks who compete for advisory mandates. Secondly, bankers' bonuses increase monotonically in the volume of deals advised; they are also likely to be positively related to the banks' market shares. Intuitively, for a given level of long-term incentives to preserve and accumulate reputational capital, banks will be more tempted to cash in (in terms of bonuses, fees, or market share) on existing reputation, when market conditions are more stringent, and bank's M&A business and revenues decline.

Abnormal returns

Thus, in order to test our hypothesis H1, we run our tests with a three-day acquisition CAR as dependent variable and a dummy of negative change in advisory banking market position as the explanatory variable of interest. The results are reported in Table 2. The first two specifications are estimated on the whole sample, and the second two specifications on the subsample of acquisitions performed by inexperienced bidders. Specifications (1) and (3) employ the dummy of falling M&A positions in dollar value, while specifications (2) and (4) use the dummy of falling M&A market share as the misalignment measure for the bidder's investment bank.

[Insert Table 2 Here]

The coefficient of the conflict dummy is negative in all four specifications, and is significant in 3 out of 4 specifications. These findings are consistent with the conflict hypothesis: acquisition returns are worse when the bidder's advisor has a falling market share (or volume of deals) in advisory business. The economic impact of the advisor's conflict on bidder returns is -0.6% in the broad sample, but is larger in the subsample of inexperienced bidders (from -1% to -1.2%). For a mean (median) capitalization of $13 bln ($1.9 bln) in the whole sample this translates into a $78 mil (10.9 mil) incremental decline in value. As the average capitalization in the sample of inexperienced bidders is $3.8 bln (median 0.7 bln), the corresponding decline in value is $46 mil (8.4 mil). These estimates can be interpreted as a loss to bidder shareholder stemming from the pressure of falling market positions that advisors experience. While moderate in percentage terms, the dollar value of the loss is quite substantial, especially if one compares it relative to average transaction size or potential advisory fees for the investment bank. The mean (median) transaction value in the broader sample is $1.0 bln (230 mil) and for a common fee structure in the industry[13] the average success fee for the bank is about $5 mil (2 mil for a median transaction). This implies that the average loss of value due to the advisor's misalignment is $78 mil (10.9 mil), which is strikingly larger than the average contingent compensation earned by the advisory bank.

The negative influence of pressure is estimated to be stronger in the inexperienced bidders sample, where one can expect banks to have more opportunity to exploit executives' lack of M&A experience. At the same time, the univariate comparison shows that abnormal returns at acquisition announcements are generally higher among inexperienced bidders: 0.8% vs. -0.02% in the group of firms that did perform acquisitions in the recent past (this difference is highly significant with p-value of 0.005). The estimates on control variables indicate that returns are worse in the case of public targets (about 3% decline in CAR), higher for cash-financed deals, and lower for stock-financed deals (the latter result is significant in the larger sample only). The

[13] A typical success fee compensation of advisory bank is 1% of the transaction for a medium size deal, and 0.5% for a billion-value transaction. See Iannotta (2010), p. 121

returns are smaller among large acquirers (variable log assets) and those with increasing sales, but increase when leverage is higher.

The results in Table 2 imply that if an investment bank advising a bidder is losing M&A market share, the bidder returns at the acquisition are lower. According to the conflict of interest hypothesis, this implies that advisory banks may facilitate lower-quality acquisitions in order to generate advisory fees. An alternative interpretation could be, however, that banks that advised on poorly performed acquisitions harm reputational capital and subsequently lose M&A market share. We address this issue of reverse causality in Section 5 by analyzing the timing of a typical acquisition and by employing lagged variables of the pressure on M&A advisor. The finding of a negative effect of advisory banker's misalignment on abnormal returns is robust to the reverse causality explanation, and indicates that misaligned incentives of advisors contribute to value destruction in M&A.

Withdrawing negative CAR deals

The results on abnormal returns demonstrate that banks with declining M&A businesses are associated with worse returns at announcements. However, the participation of advisory teams does not end at the deal announcement, and banks continue to be involved in the acquisition process until deals are resolved. Thus, having observed that the initiated deals tend to be worse, we have to investigate what happens following an announcement. Announced deals have to undergo a phase of intensive negotiations and due diligence by both sides, and fulfill all applicable regulatory approvals; moreover, transactions that appear to be less favorable to the bidder can still be withdrawn. We further test how the pressure of falling M&A businesses impacts the withdrawal frequency conditional on deals being negatively met by the market, i.e. deals with negative abnormal returns at announcement. The results are presented in Table 3, where similarly to the previous tables we report results for the whole sample in specifications (1) and (2) and for the subsample of inexperienced bidders in specifications (3) and (4).

[Insert Table 3 Here]

In all four specifications, the dummy of advisor's falling business has a significant negative impact on the probability of withdrawing deals that were met with negative abnormal returns at announcement. The effect has an order of magnitude of 8 to 11%, which is very considerable relative to the 15% unconditional mean withdrawal probability for negative CAR deals. This result shows that advisory teams that are under pressure to generate advisory revenue are more likely to be involved in deals that are less sensitive to the negative market reaction. This is in line with our previous result, and shows that advisory banks that are under pressure of falling market share are more likely to trade off their clients' well-being, and hence the bank's reputational capital, for the sake of short-term goals such as receiving contingency fees upon deal completion and improving their League Tables' positions.

The finding that negative CAR deals are less likely to be withdrawn also helps us to rule out the concern raised in the beginning of this section that our results could be driven by lower banker qualification. The previous finding on abnormal returns could be consistent with an alternative explanation that a decline in the expertise of advisory bankers (e.g. due to departure of best bankers to competing banks) leads to lower quality advice, and at the same time also leads to a decline in M&A market shares. Due to unavailability of the complete data on the turnover of executive bankers, it is hardly possible to directly test this alternative explanation for the relation between lower returns and lower market shares. However, higher completion rate among banks that lose M&A market share is indirect evidence against the lower qualification explanation, as we would expect lower quality bankers to deliver lower completion rates. Thus, the two results taken together show that less profitable deals are more likely to be initiated and less likely to be withdrawn due to the fee generating incentives of advisory bankers, rather than due to the alternative explanation of best bankers leaving the advising bank.

Estimates for other variables show that an announced deal with negative CAR is more likely to be withdrawn if the transaction value is large relative to the bidder (Relative size), the target is more complex as measured by the number of SIC codes, and the bidder's leverage is higher.

It shows that corporate management is more attentive to stock price reaction in case of the larger and more complicated deals, and if financial and monitoring discipline imposed by higher leverage is present. Further, transactions are more likely to be withdrawn if a bid is unsolicited and if stock consideration is offered. Interestingly, a toehold dummy also positively relates to the withdrawal probability. On the one hand, accumulating shares before the announcement should increase the chances of a successful takeover, and in general is indicative of a serious attitude of the bidder - keeping all other factors equal. However, by construction the variable of having accumulated shares as a toehold (with positive values reported usually for public targets only) is positively associated with the probability of an unsolicited or challenged takeover, hence, the negative effect on the success probability. In the inexperienced bidder sample, a higher market-to-book value is related to a higher probability of canceling a deal – intuitively, firms with higher valuations were hurt more by negative CAR at announcement, while more solid sales growth is related to a smaller probability of withdrawal. Finally, in the whole sample, asset size is negatively related to withdrawal frequency, either reflecting classical agency problems in larger corporations or their stronger capacity to overcome target resistance and competing offers.

Discussion

The results in this section show that banks facing declines in their market shares have a lower quality of acquisitions, which is related both to abnormal returns at acquisitions and the withdrawal frequency of potentially value-destructing deals. Additional tests reported in the robustness section below, where we use lagged pressure variables, reinforce our interpretation that distorted incentives of the advisory bank are driving subsequent poor client performance at acquisitions, and not vise versa.

Thus, our findings show that poorly aligned M&A bankers can be another important factor contributing to the inefficiency of acquisitions – besides, and possibly on top of, distorted managerial incentives that are well documented in the literature. At the same time we cannot give a full account on whether advisory banks intentionally mislead bidder executives to initiate

suboptimal transactions, or rather simply exploit the bidding desire of overconfident and empire building managers in order to increase advisory revenues. The higher magnitude of our results in subsamples of inexperienced bidders can be consistent with the version of passive managerial involvement (bankers enticing naive managers to acquire unreasonable targets or to overpay), but we can not rule out that this effect also derives from a stronger desire of such firms to acquire.

As we discussed previously, stock-based compensation aligns managerial incentives with those of shareholders and motivates managers to undertake only those acquisitions that positively affect shareholder value, in which case our results are consistent with the interpretation that conflicted bankers inspire and push executives into suboptimal acquisitions. Executives with a strong influence on compensation committees, however, may have an implicit insurance of their stock holdings against adversely performing acquisitions (see Harford and Li, 2007), in which case conflicted bankers can play a role of agents who merely act as executors of suboptimal deals.

Importantly, executives' wealth is negatively affected by inferior stock performance, while negotiating new stock option grants following poorly performing mergers is presumably costly for managers. Thus, managers have direct monetary exposure to stock price performance in acquisitions – unlike bankers, who typically receive a contingency fee upon deal completion, do not have direct exposure to deal performance and have what seems to be limited reputational discipline (see Edmans and Bao, 2010). Thus it is plausible to interpret our findings as indicating the presence of more than a mere exploitation of corporate executives' bidding ambitions by advisory bankers. In either case, the advisory bank is hired to maximize the value and serve the interests of corporate shareholders, so managerial traits and ambitions should not themselves be a reason to let the market position pressures compromise the interests of ultimate clients and readily advise on value-destroying deals.

In the next subsection we assess the relation of analyst presence to both the abnormal returns

and withdrawals of negative CAR deals; then we explore additional aspects of acquisitions such as bidder and target stock run-ups and mode of payment, and their relation to M&A advisors' incentives.

4.2 The mitigating role of analyst coverage

Our results on the abnormal returns and withdrawal of negative CAR deals show that the quality of acquisitions is lower if bankers' incentives are more misaligned due to deteriorating M&A market position. In our discussion of incentives in banking we conjectured that a potential conflict may arise when a bank's trade-off between maximizing its own revenues and pursuing the interests of its clients deteriorates, which may happen when the immediate payoff of deviating exceeds the discounted future benefit of doing business in the best interest of clients, where the latter may be referred to as reputational considerations.

Here we investigate one of possible channels that may directly increase the reputational costs of advising on acquisitions that destroy value – the analyst coverage channel. As Kelly and Ljungqvist (2010) mention, equity research analysts are among the most influential information producers in financial markets. This research industry affects the level of information asymmetry related to stock prices, which in our case can imply that either at the time of acquisition announcements, or in subsequent periods, analysts would expedite the discovery of negative information if advised deals do not create value to the bidder. Thus, the presence of research analysts strengthens the monitoring role of financial markets and increases public scrutiny acquisition decisions may be subject to. Furthermore, firms with higher coverage can exploit it as valuable source of information: analysts produce relevant analytical overviews on the firm's position in the industry and on whether hypothetical acquisition strategies make sense. Thus, a potentially value-destroying acquisition favored by the bank can be more easily dismissed if reputable analysts negatively comment on the prospects of a hypothetical acquisition (either directly through conversations with industry executives or indirectly through publishing research

reports).

We test whether the presence of analysts covering the bidder affects the negative effect of misaligned incentives on abnormal returns and on the probability of withdrawal. We do so by repeating our tests of H1 and H2 with the inclusion of an additional variable, namely number of analysts covering a firm in the year preceding each acquisition. To assess how the presence of analysts impacts the misalignment of advisory bankers, we interact the number of analysts variable with both specifications of our pressure variable.

[Insert Table 4 Here]

The results for the abnormal return regressions are reported in Table 4. Similarly to our previous results on acquisition CAR, the dummy of advisor's negative business dynamic has a significant negative estimate in three out of the four specifications. The interaction between the pressure dummy and the number of analysts that follow a bidder is our main interest in these regressions, and it has a positive coefficient, which is significant in two specifications. The size of the coefficients shows that with 10-15 analysts covering a bidder, the effect of bankers' incentive misalignment is close to zero (note that an average bidder is followed by 8.3 analysts). This indicates that in the case of bidders characterized by above-average coverage the conflict is mitigated and becomes insignificant, which suggests that bankers let the market pressure influence the quality of acquisition advice only if reputational costs are not too high, i.e. when there is not much investor attention to the bidder and to its acquisitions. The analyst coverage as a stand-alone variable is negatively related to acquisition CAR, although the estimates are significant in broad sample regressions only; this may indicate either poorer growth prospects in more covered (and larger) firms, or agency problems in these more mature companies. Estimates on all control variables are very close to those in Table 2.

Next, we turn to the withdrawal probability tests, where we add the analyst coverage variable and its interaction with the pressure dummy. Here we conjecture that better analyst coverage should facilitate the withdrawal of deals that are perceived by the market as value destructive

(deals with negative announcement returns). The regression estimation results are repeated in Table 5, where we see that the results on the lower withdrawal frequency among deals advised by more conflicted banks still hold.

[Insert Table 5 Here]

More importantly, we observe that the interaction between the conflict dummy and the number of analysts has positive and significant estimates in all four specifications (now, depending on a specification, it takes 14-30 analysts to offset the negative effect of advisory misalignment).[14] Thus, together with the previous result on abnormal returns, our next important finding is that the negative effect of advisory incentives is mitigated if more analysts are covering the bidder. Again, the stand alone variable of analyst coverage is negatively related to the probability of withdrawing negative CAR deals (this time the estimates are highly significant in the inexperienced sample, and are outside of significance level in the broader sample), which again may hint at size effect or agency problems in better covered firms. Control variables generally have the same signs and significance as in the previous regressions of withdrawal frequency, although Target complexity, Sales growth and Leverage now have lower significance in most specifications.

Our findings on the mitigating role of analyst coverage provide interesting evidence on the value of analyst research. Investment research, despite being characterized by conflicts as documented by Michaely and Womack (1999) and others, was shown to be an important source of investment-related information, which reduces information asymmetry between firms and investors, and thus creates value for financial markets (See Kelly and Ljungqvist, 2010, and references therein). We find that the M&A market pressure of advisory banks negatively affect acquisition outcomes only among firms with low analyst coverage; this demonstrates that

[14] We also estimated the corrected interaction coefficients and standard errors for each observation (see Norton, Wang and Ai (2004). The corrected estimates for interaction effects are always positive and have similar significance levels to those estimated with regular probit routines on most of the range of the predicted withdrawal probability.

the presence of research analysts is associated with better discipline that precludes suboptimal acquisitions.

As we do not address potentially important systematic differences in corporate governance between firms with low and high coverage, we do not interpret this result causally: that better coverage causes better acquisitions; this would be outside of the research agenda of this paper. We should mention, though, that assuming better corporate governance in better covered firms would be inconsistent with lower abnormal returns and lower withdrawal probability among these firms. What we can however claim is that in the presence of better analyst coverage, the trade-off that bankers face shifts in favor of client value maximization, and conflicts that bankers have are less likely to negatively affect the quality of their acquisition advice. In other words, a stricter investor attention to a firm's business seems to substitute for the lack of monetary and reputational incentives to put client interests ahead, and it can alleviate the temptation bankers may have to promote suboptimal deals.

A conclusion that we can make based on the analyst coverage results is that bankers seem to avoid advising on poorly performing acquisitions if the perceived reputational costs of doing so are high. This enables us to further discard the alternative interpretation that an omitted variable, such as lower quality of bankers, can simultaneously drive lower acquisition quality and lower M&A advisory shares. As the quality of acquisitions falls due to a deterioration of incentives only among less-covered bidders, it is not consistent with the omitted variable explanation: when investor scrutiny is stronger, the pressures of competitive position *do not* lead to a decline in the quality of acquisitions. Thus, similarly to the withdrawal probability findings, the analyst coverage result helps us to rule out the alternative interpretation that our findings are driven by unobserved advisory quality, and reinforces the interpretation of a causal effect of advisory incentives on the quality of acquisitions.

4.3 Pre-announcement run-ups; mode of payment

We begin this subsection by exploring the influence of an advisor's declining market pressure on the pre-announcement dynamic of bidder- and target stock price. When the market anticipates a takeover, a classic arbitrage strategy is to go long the target and short the bidder; insider trading, if present, would illegally attempt to profit from the same strategy. Hence, we observe a negative average pre-announcement run-up in the bidder and a positive one in the target stock. Next we proceed with testing hypothesis 3 and analyzing how an advisor's incentives affect the pre-announcement behavior of 60 trading day bidder's stock run-up.

[Insert Table 6 Here]

As we observe in Table 6, in all four specifications the relation between the run-up in the bidder's stock and the dummy of advisor's declining M&A position is positive. The coefficient on falling advisory business dummy is significant in all but the third specification, where the p-value is slightly above 10%. The size of the effect is 2-3% in the whole sample, which is close in magnitude to the unconditional -3.2% average bidder run-up in the whole sample. In the inexperienced bidder subsample, the magnitude of the effect is of the order of 4-5%, even larger than the absolute value of the unconditional run-up (-3%) in the respective sample. Putting the insider trading issue aside for a moment, we can interpret this result as a lower ability of the market to predict deals that are put forward by more conflicted advisory bankers or their bidding clients. As the market participants (e.g. hedge funds with event-driven strategies) are likely to continually evaluate potential takeover transactions, less predictable deals can also mean that such deals make less economic and strategic sense for the acquirer, and thus deal announcements come more often as a surprise to the market and run-ups are less negative than for bidders with non-conflicted advisors.

An alternative explanation for a more positive bidder price change prior to announcements can be that conflicted banks often succeed at convincing firms with better recent stock market dynamics to go for acquisitions, and we capture part of this effect (even though we control for

market to book and other firm characteristics). While this explanation is quite plausible and part of the coefficient may indeed reflect better recent stock performance, it does not rule out the fact that the market still appears to be less able to predict these (possibly more imminent) acquisitions by companies that did relatively well in the recent past.[15] Finally, the market to book value itself is insignificant in explaining the run-ups – also in alternative specifications, where the dummy of falling M&A business was interacted with the market to book (unreported).

As for the insider trading aspect, we know from Bodnaruk et al (2010) that banks characterized by a conflicted intersection of the advisory and asset management divisions appear to engage in insider trading more often. We do not address this type of conflict in our paper and can only note that our misalignment stems from a decline in a bank's advisory revenues, while theirs comes from the presence of other businesses with conflicted interests (for instance, the desire of proprietary trading desks to take long positions in potential targets of advisory banking clients). The two types of conflict are drastically different in their source and are unlikely to be significantly correlated, hence our results add different evidence and shed light on another type of misalignment in investment banking.

Among the control variables, accumulated toehold seems to make the run-up more negative (albeit the significance is outside 10% level), which marginally reflects the fact that an accumulation of stock of the target can shift its price before announcement. Sharing the same SIC code (and higher free cash flow, in the whole sample only) makes the run-up less negative, although we could expect that acquisition predictability would be higher (and then run-ups more negative) for firms acquiring within the same industry or having higher cash reserves at their disposal. Higher acquirer leverage also makes the run-up less negative, which reflects the lower anticipation of takeovers by firms with higher debt burdens. Finally, a higher ROE is related to more negative run-ups in whole sample regressions.

[15]Yet another alternative explanation that deals advised by banks with falling M&A business are actually higher quality and thus pre-announcement stock performance is more positive is not plausible in light of more negative performance at announcement of such acquisitions.

[Insert Table 7 Here]

Pre-announcement target run-up results are presented in Table 7. Mirroring the bidder run-up result above, the run-ups in the target stock are smaller (here less positive) in deals advised by more conflicted advisors. The coefficient is negative in all four specifications and is significant in three of them. The effect is of the order of 6 to 12%, which compares to the unconditional mean target run-up of 3.4% and univariate comparison results of 4.7% run-up among advisors with positive dynamics vis-a-vis the 1.1% run-up for deals advised by banks with falling M&A position. This finding shows again that deals advised by banks with deteriorating business come more as a surprise to the market, and as such are more likely to make less economic sense.

Similarly to the bidder run-up setting, we can not rule out that banks with falling business are systematically more likely to persuade bidding clients into acquiring targets that relatively underperformed or became undervalued in the recent past, which can partly explain the effect we document. This, however, does not change the fact that the market seems to be less able to identify (potentially more underpriced and thus more imminent) takeover announcements that result in a mean unconditional three-day target CAR of 18% in the whole sample. Univariate comparison shows that target abnormal returns at announcements are on average three percent higher in the case of more conflicted advisors, indicating that a strategy of going long the potential target may bring lucrative profits to arbitrageurs, and if any different, the potential arbitrage profit is higher in deals advised by misaligned banks, but it appears to be overlooked and come as a surprise to the market.

Finally, if this result is driven by a relative undervaluation of the target, it would imply that the bidder has a chance to buy it at a bargain price. However, in order to reconcile the relative undervaluation explanation with the finding of a more negative announcement abnormal returns at acquisitions advised by misaligned banks, it has to be that M&A combinations advised by conflicted bankers do systematically make less economic sense for the bidder. This supports our hypothesis that advisory bankers become less concerned with economic value creation for their

clients when bank-specific market conditions become more adverse.

Among the control variables, a strong positive effect on target run-up has the bidder's free cash flow, which reflects a higher predicted (by the market) probability of a takeover move by a cash-rich acquirer. The merger dummy and higher bidder ROE also positively relate to the run-up, but only in the broad sample of acquisitions.

Finally, we turn to analyzing the mode of payment. We report here the results on stock financing mode only, but in unreported regressions on choosing cash financing these results are repeated in terms of magnitudes (advisors under pressure associated with more frequent stock and less frequent cash financing) and significance. The results appear in Table 8.

[Insert Table 8 Here]

As the results suggest, if an advising bank has negative dynamics in its M&A business, the stock mode of financing is more often dominant in acquisitions and the corresponding impact is between 2 and 6 percentage points. With an unconditional probability of using stock financing of 21% this implies an increase of 10 to 30% in the frequency of stock financing in the case of more misaligned advising banks. As for the choice of a cash-dominant mode of financing, the results (untabulated) mirror the stock-financing findings. More misaligned banks are associated with a *lower* probability of choosing a cash mode of financing, and the coefficient is at least 5% significant with a coefficient value between 8 and 15%, which compares to the 37% unconditional probability of choosing a cash mode of financing.

Thus, the results in Table 8 show that advisory banks seem to offer their clients (or support their desire) to use stock financing in acquisitions. Using stock financing may be in the interest of bidder shareholders, if executives optimally decide to exploit a temporary overvaluation of their own stock to pursue attractive opportunities, but at the same time it may imply that in pursuit to generate new revenues banks have better chances of persuading corporate management to opt for stock-financed deals for a number of reasons. First, the firm may simply lack the needed funds to acquire, and using the stock financing is a useful alternative to finding outside financing

– particularly so if there are no apparent benefits for the bidder from doing a transaction and if banks are reluctant to offer financing. Second, stock-financed transactions tend to be more complex, less transparent and require additional working hours of investment bankers to perform additional calculations, which may justify higher fees related to such transactions. Finally, due to its higher opaqueness, it is harder to find hard evidence of a stock-financed deal failure. For example, a negative stock price reaction can be alleged to be due to a temporary overvaluation of the stock price, which managers or bankers may claim was used in the best interest of shareholders as an acquisition currency. At the same time our bidder CAR regressions control for the mode of transaction, and the negative effect of banker misalignment is reported net of the typical positive effect of cash consideration and the negative effect of stock consideration.

Bidder complexity and unsolicited deals are negatively related to stock financing – the former effect reflecting easier access of conglomerate bidders to internally generated cash for acquisitions, and the latter possibly implying that unsolicited deals are easier to complete if cash consideration is offered instead of stock. Merger and geographically focusing transactions increase the odds of stock financing. Size and free cash variables proxy for easier access to internal funding and make stock financing less likely. Market to book proxies for the overvaluation of own stock and increases the odds of stock-based consideration. Interestingly, higher leverage negatively relates to both cash and stock financing (significant only in broad sample regressions), implying that more leveraged firms use cash or stock financing more seldom and instead opt for alternative (possibly hybrid or asset swaps) types of consideration.

4.4 Relationship banking: assessing the effect of advisory pressure in the setting of a former IPO underwriter

Besides observing the negative impact of advisor's deteriorating incentives, we also saw that this impact was somewhat stronger in the subsample of inexperienced bidders. Indeed, if banks are

to propose suboptimal deals, or to facilitate the completion of deals that executives initiated, the scope of influence can be stronger in the case of firms that are less experienced in M&A. On the other hand, established relationships between the advisory bank and the firm can also give bankers a higher degree of influence on its corporate acquisition policy and thus facilitate the potential for proposing suboptimal acquisitions, when the pressure to generate advisory revenue is higher. In this case the subsample of firms that recently went public and that are awarding an M&A mandate to the former IPO underwriter is an ideal setting to assess how distorted bank's incentives impact deal outcomes.

[Insert Table 9 Here]

To test our hypothesis H1.b that CAR at acquisitions are worse if advising banks are misaligned, we use the sample of acquisitions performed by firms within two years following an IPO with the same advisory bank. (Changing this threshold to one or three years does not change the direction or significance of the results.) Regression results appear in Table 9. Both estimates on the dummy of falling M&A business are negative, indicating a similar adverse effect of distorted incentives of the advisor on the acquisition quality. As for the control variables, the overall significance level is notably lower in this setting, reflecting a smaller sample size (165 deals). Besides the positive effect of cash consideration, the relative size of the target also positively impacts the CAR of the bidder. The magnitude of the falling M&A business dummy coefficients is higher than in both broader and inexperienced bidder samples, which indicates that established relationship is another important factor allowing advisory bankers to push forward acquisitions that are less profitable for the acquirer. This parallels the results in Bao and Edmans (2010), who show that retaining a past M&A advisor leads to worse future performance in acquisitions, particularly if the bank advised on negative-CAR transactions in the past.

We should note that in the setting of the former IPO underwriter subsample, the reverse causality issue is a minor problem, as such acquisitions constitute only a small proportion of total M&A advisory business. Thus, we are less concerned that following an announcement of a

low abnormal return deal (in this small subsample) the overall market share of the advisory bank will go down. Overall, the results of this part show that the established relationship can be used by advisory teams that seek to increase advisory revenues if the bank is under pressure of falling market conditions. Thus, if a bank's trade-off between its own profits and its long-term reputation deteriorates, an established relationship with a firm presents an easier way for the bank to initiate deals that bring advisory fees but do not create value for shareholders of bidding firms.

5 Robustness: addressing the reverse causality and omitted variable issues

In this section we investigate whether our results are robust to alternative explanations, such as the reverse causality and omitted variable problems. For the former, we repeat our tests with a lagged League Table dynamics variable, while for the latter we use exogenous variations in bank profits as a proxy for pressures that can distort the quality of advice provided and negatively affect acquisition outcomes.

5.1 Reverse causality

The results of testing hypothesis 1 show that the negative pressure on M&A advisor is related to a more negative performance as measured by announcement abnormal returns. This association can, on the one hand, result from a conflicted banker's incentive to have more deals completed in order to generate fees. Hence, such pursuit for quantity performance can negatively impact acquisition quality, as acquisitions can be unnecessary for the bidder, target may be unsuitable, or consideration paid can exceed the value of the target and the synergy. On the other hand, it can be the case that managers of future bidders carefully analyze the performance of investment banks in most recent transactions, and try to avoid choosing advisors involved in deals with

negative CAR. This alternative explanation would also lead to a higher incidence of observing ex post lower CAR deals and poorer performance (and vise versa) in the same year. For a better understanding of which explanation is valid, it is critical to know how long before the announcement a typical transaction was initiated and at which stage an advisory bank was hired.

By examining corporate reports with descriptions of M&A negotiations (Schedule 14A forms in Edgar), it becomes clear that several months typically pass between a deal initiation and its subsequent announcement. If we imagine a hypothetical bad acquisition initiated in the beginning of a calendar year (e.g., due to the involvement of a conflicted M&A advisory team that had no other perspective mandates in the beginning of the year), such a deal may become publicly known by the middle of the year. And if the alternative explanation is valid, prospective clients may start avoiding a bank that advised on a bad acquisition, but this will be only observed in the data once deals initiated in the middle of the year become announced later in the year or even in the following year. Thus, a considerable time lag between deal inception and its announcement likely precludes an alternative explanation of reverse causality from being a major driving force in our results. Even if some negative information is known at the time of choosing an advisor, Bao and Edmans (2010) show that past underperformance in qualitative characteristics of deals is of insignificant influence on the choice of advisor and on future market share.

It is desirable, however, to test in our sample whether this alternative explanation is viable – particularly in the broader sample, where low announcement returns of all deals could potentially preclude an investment bank from winning new advisory mandates. As collecting a precise timing of related negotiations and resulting announcements is very tedious if not impossible, we employ an alternative specification of the falling M&A business variable, which relies on lagged quarterly dynamics of advisors' business. In the main specifications, we employ a dummy indicating whether in a year of acquisition announcement an advisor's M&A business was falling

relative to the previous year. To the extent that acquisition returns of deals announced in the first half of the year may drive the market share of advising bank in the second half of the year, we want to have in an alternative specification the pressure that a bank is subject to *prior* to acquisition announcement. For example, we could employ our main measure of the conflict, the change relative to the previous year, but lagged by an additional year. In this case, for an acquisition announced in 2008 we would have a variable measuring the growth of advisory business in 2007 relative to 2006. While being an intuitive metric, this variable would likely not represent the current pressures that an advisory team faces (we may cite here a very dynamic pace of this business and high turnover of bankers), so a more recent metric is desirable.

To accommodate the need to have past pressure which is yet topical enough at the time when an acquisition is being prepared for announcement, we use a dummy variable capturing whether there is a decline in the business of an advisory bank in the three pre-announcement quarters relative to its business in the preceding year. Thus, we still use a dummy that indicates the dynamics of advisor's M&A business over the most recent two years (here: up to the quarter of the announcement), but we exclude the quarter of the announcement itself when calculating the pressure variable. As an illustration, a deal announced in the fourth quarter of 2008 is considered to be advised by a conflicted bank if the bank has a smaller average market share in the first three quarters of 2008, relative to its average market share during the four quarters of 2007. For example, deal NN initiated under higher pressure (during preceding three quarters with relatively low advisory revenues) will be announced in the current quarter and will appear in the data as being possibly a suspect for a conflicted deal.

We should note that this metric has a certain degree of conservatism, as for instance the negotiations on deal NN are in reality impacted not only by the deal flow announced in the past three quarters, but also by deals currently in the pipeline of the advisory team, which are not yet announced (in contrast, our main measure of pressure will account for most of such deals as long as these are announced during the current year). If anything, this conservatism would be

against us finding significant results as compared to using our main variables of pressure.

Employing this variable capturing the M&A dynamics over the most recent two years at the quarterly level gives us the advantage of resolving the issue of contemporaneously low CAR and low M&A dynamics, and yet to reflect a reasonably current pressure the M&A team is facing. The estimation results with this alternative measure are reported in Table 10. As previously, the pressure variable is calculated both for dollar values of all deals advised (specifications (1) and (3)) and for the share of involvement by M&A transaction volume ((2) and (4)).

[Insert Table 10 Here]

The estimated coefficients on the falling quarterly dynamics dummies are quite close in size to the estimates with yearly pressure variables in Table 2. All four estimates are negative, although now the coefficient on quarterly share change has significance outside of conventional significance (p-value of 0.14). The lower significance of the advisory share specifications may reflect the fact that we use only announced deals, but not the transactions in the pipeline that an investment bank is advising (that are also an important determinant of pressure on the advisory team), which may lower the predicting power of these lagged specifications. With this caveat in mind, our main findings are nonetheless unchanged: falling M&A business of the advisor is related to poorer bidder stock performance at subsequent acquisitions, and the construction of these alternative pressure variables rules out the alternative explanation of reverse causality. Estimates on other variables are in line with those in Table 2: CAR are lower for public targets and larger bidders, and higher for cash consideration and higher leverage.

Thus, an important result of this section is that the reverse causality does not appear to drive our results, and indeed higher pressure on advisory teams leads to poorer client abnormal returns at acquisition announcements.

5.2 Addressing an omitted variable concern

As we discussed in Section 4, in an ideal experimental setting we would like to observe how a negative exogenous shock to a bank's performance would affect the acquisition quality of bidding clients. We would then be able to conclude whether advisory banks may decrease the quality and impartiality of their advice in response to stringent market conditions and declining revenues. A potential concern in an observational study is that negative shocks to advisory business dynamics may be correlated with some unobservable factors that also affect acquisition outcomes.

For instance, the change in bankers' expertise could be directly related to both the position in League Tables and to the quality of acquisitions of bidding clients. When a seasoned M&A banker is hired, an investment bank is likely to be interested in the existing client network of the banker – as the new hire may be expected to bring connections with former clients onboard. If the skill of advisory bankers is strongly related to their track record and thus to the quality of their client network, the concern is that banks that experience outflows of more experienced bankers will as a result have both declining League Table positions and a poorer quality of advised acquisitions. In that case, the observed relationship would reflect the departure of more experienced bankers (e.g., of those hired by competing banks), and the interpretation of advisory misalignment leading to poorer acquisitions would be misleading.

There are two reasons to expect that skill and quality-driven explanations unlikely drive our results. There is no evidence that departing bankers can take significant client activities with them. Unlike with "star" traders, individual bankers' value is not as easily transferrable, and unless a whole M&A team moves to a competing bank (see fn 9), clients are unlikely to follow on a massive scale. In addition, our finding that more conflicted banks have higher acquisition completion rates suggests that incentives rather than skills drive our value results. Nonetheless, we constructed a measure of exogenous pressure to verify whether business pressures unrelated to turnover of bankers can too lead to poorer acquisition performance. We cannot directly control

for bankers' turnover, but we rely on exogenous variation in bank profits. Two specifications below represent exogenous shocks to M&A advisory teams' incentives: we constructed these using i) net earnings and ii) trading income variables from BankScope.[16]

For the first specification, we construct the residual part of total bank earnings that is unexplained by the bank's M&A business. For that purpose, we regress total bank earnings on bank's M&A variables: League Table's share, volume and number of deals. While all these M&A variables are positively related to earnings, only the yearly number of deals has statistical significance at a conventional level (p-value of 0.025 to be specific). We therefore construct a variable by using the residual from regressing total earnings on the yearly number of deals, with year and bank fixed effects. This residual represents a change (or shock) in total bank profits that is unrelated to M&A advisory; we can therefore treat it as exogenous to the bank's M&A skills. We construct a dummy variable equal to one if the change is negative and zero if it is positive. This dummy measures the pressure on M&A advisory team – similarly to our key explanatory variables in the previous sections, but now exogenous to the turnover of M&A bankers. It represents indirect pressure on the monetary incentives of advisory bankers. Intuitively, if a bank has losses in other departments, the M&A team would be under indirect pressure to generate revenues in order to contribute towards reviving profitability and meeting earning targets. Clearly, this measure does not reflect the skill and quality of advisory teams.

For the second specification, we employ the dynamics of trading income, which should also be relatively independent from the skills of M&A bankers. We calculate annual changes in trading income, and construct a dummy variable for declining trading income. Similarly to the previous specification, this variable represents pressures that are independent of the skill of the M&A department; but may nevertheless provide incentives to boost profits at times when in a given bank an important source of income, trading profits, declines.

The results of testing our main hypothesis with two variables representing exogenous sources

[16]We are able to match bank profitability values for 24 banks, as some advisory banks do not have reported performance details due to private status, or after being acquired in 1990s

of profit pressures as key explanatory variables (instead of falling League Table share and M&A transaction volume as in Table 2) are presented in Table 11. All four estimates have the predicted signs and similar magnitudes to the estimates of specifications (1)-(4) in Table 2 respectively. Specifications (1) and (3) with the residual income pressure dummy have significantly negative estimates, while the negative estimates for the trading income change are slightly outside of conventional significance levels. This difference in significance may hint at the effect of internal cash flow diversification within a bank: while falling trading revenues may exert some marginal negative pressure onto the incentives of M&A teams, it is the decline in combined profits of the whole bank (here excluding M&A revenues to avoid endogeneity concerns), which may lead to strong negative pressures onto advisory quality. Most control variables have similar signs and significance levels as in previous tests.

The results of this section support the causal interpretation of our findings in previous subsections: negative pressures in advisory banking lead to lower quality, less objective advisory services, which result in poorer performance in acquisitions. By ruling out omitted variable concerns and focusing on relatively exogenous pressures, we confirm our interpretation that when a bank is under stronger pressure to generate revenues, the interests of the client are more likely to be traded-off for aggressive revenue-generating considerations.

6 Conclusions

In this paper we present novel results on misalignment in advisory banking. The compensation structure in M&A advisory provides strong incentives to have more deals originated and completed, with little direct attention to the quality of executed acquisitions. We focus on the situations where the pressure on M&A teams to increase advisory revenues is stronger. We conjecture that banks with falling M&A revenue (or falling share in the M&A market) are subject to stronger misalignment, and we assess whether it changes the quality of advised acquisitions for bidding clients.

Our results reveal that the efficiency of acquisitions indeed depends on the advisor's incentives driven by its position in M&A business. We document that a bank's declining position in the M&A League Tables causes lower announcement returns to clients' acquisitions. Our results are stronger in subsamples of inexperienced acquirers, and among bidders who recently underwent an IPO and retained the same bank as acquisition advisor. A reverse causality concern could be that banks that advised on poorly performing deals subsequently lose client base, but our findings continue to hold in an alternative specification with lagged competitive pressure variable. Pressures that advisory teams experience immediately before the deal announcement are negatively related to abnormal returns.

Further, we show that for acquisitions with negative announcement returns the withdrawal probability is smaller when advisory banks experience declines in their M&A market position. On the one hand, it shows that banks that are under stronger pressure to generate advisory revenues are more likely to facilitate the completion of deals that the market dislikes. On the other hand, this finding rules out the qualification-driven alternative explanation to our result that abnormal returns are worse when advised by banks with deteriorating M&A business. Completion rate – if any different – would have to be lower to be consistent with the explanation of lower qualification of bankers at losing banks. These results taken together show that the shareholder value outcomes are worse if deals are advised by more conflicted banks.

Additionally we show that the results on lower abnormal returns and lower withdrawal rates among more conflicted bankers are driven by bidders with relatively low analyst coverage. As the number of following analysts increases above average, both effects taper off, which indicates that market scrutiny creates reputational costs for the bankers from being associated with suboptimal deals. The presence of analysts is not related to higher quality of deals on its own.

Finally, by analyzing further characteristics of the deals, we find that stock price run-ups are less pronounced both for the bidder and for the target, when banks are under stronger pressure to generate advisory revenues. This indicates that deals advised by misaligned banks

are more unexpected by the market and as such may make less economic and strategic sense for the buyer. Rather, such deals appear to be more often motivated by the advisory bankers' desire to propose some acquisition opportunities that are less suitable for the acquirer. As for the mode of consideration, we find that stock is more likely to be used (and cash less likely) if advisory banks are under higher pressure. This suggests that using stock financing helps advisory teams and their clients to overcome the issues of funding at deal inception and potentially also helps to disguise the true stock market reaction to such deals following deal announcement and completion.

Taken together, our results suggest that there is indeed a conflict of interest in investment banking, namely that bankers may have incentives to exert pressure on executives in pursuit of acquisitions or provide advice in favor of suboptimal acquisitions, thus generating high advisory fees, but not necessarily creating value for the shareholders of acquiring firms. We leave out the issue of whether executives are being misled regarding the true quality of acquisitions, or whether bankers readily satisfy the acquisitive appetites of managers who are subject to empire building ambitions or overconfidence biases. What we can, however, conclude is that advisory banks can compromise their long-term reputation and interests of their clients' shareholders for the sake of reviving their own competitive position, improving advisory revenues and bankers' bonuses.

Our results support several findings in the recent literature on the deterioration of the value of relationship banking, conflicts of interest and distorted incentive mechanism in banking. The novelty of the paper is in documenting the adverse effect of investment banks' misalignment and the resulting biased advice on the quality of acquisitions that their clients undertake.

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Table 1: Sample description and univariate comparisons in the broader sample

The first two columns describe the whole sample, and the last four columns compare acquisition and firm-related characteristics depending on an advising bank's M&A volume being positive vs. negative. CAR represents 3-day abnormal return at announcement net of value-weighted CRSP return; bidder cap change represents (excess) change in bidder capitalization in million USD calculated based on CAR above. Bidder (target) Run-up variable represents 60 trading day bidder (target) stock price return (net of value-weighted CRSP) up to the 4th trading day prior to acquisition announcement. Withdrawing is dummy of a withdrawn acquisition, where conditioning on negative CAR restricts the sample to acquisitions with negative 3-day abnormal returns at announcement. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder assets, market capitalization, sales, sales growth, and ROE are from the financial year prior to acquisition announcement. Premium 1 wk (4 wk) describes by how much a transaction value exceeded market value of the target 1 week (4 weeks) prior to announcement. Covering analysts is the number of analysts reported in IBES as following a bidder in the year prior to acquisition announcement.

	mean	median	M&A volume dynamics:			
			positive	negative	mean diff	median signif
Observations	2944	.	1832	1112		
Bidder CAR	0.003	0.003	0.006	-0.001	-0.007**	
Bidder cap change, $ Mil	-112	2.6	-90	-148	57	*
Bidder Run-up	-0.032	-0.01	-0.032	-0.016	-0.016**	
Target CAR	0.18	0.17	0.17	0.20	0.031**	*
Target Run-up	0.034	0.037	0.047	0.011	0.036**	
Withdrawing $\mid CAR < 0$	0.15	.	0.17	0.14	0.028	
Withdrawing	0.15	.	0.15	0.14	0.006	
Cash-based consideration	0.37	.	0.384	0.356	0.029*	
Stock-based consideration	0.21	.	0.21	0.21	-0.002	
Bidder assets, $ Mil	21037	1402	17836	26311	-8474*	***
Bidder cap, $ Mil	12849	1852	11218	15534	-4315***	***
Bidder sales, $ Mil	6576	1095	5559	8253	-2694***	**
Bidder sales growth	0.23	0.14	0.24	0.21	0.02	*
Bidder ROE	0.096	0.122	0.115	0.064	0.051	
Premium 1 wk	0.382	0.306	0.36	0.42	-0.061**	
Premium 4 wk	0.450	0.365	0.43	0.49	-0.071	
Covering analysts	8.3	4	8.1	8.6	-0.5	

Table 2: Bidder's CAR and advising investment bank's M&A business dynamics.
The table presents an OLS cross-sectional regression of acquisition CAR on the indicator variable of M&A advisor losing the League Tables position relative to the previous year, and control variables. For specifications (1) and (3) competitive position is measured as total dollar value of all US transactions, while for (2) and (4) it is the share of all transactions an advisor was involved in. Relative size is ratio of transaction value to bidder cap, Bidder (Target) complexity is the number of bidder (target) sic codes appearing in SDC. Same state, Public Target and Merger are self-explanatory dummies, Unsolicited dummy denotes transactions classified as unsolicited or hostile by SDC. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder's accounting variables are ROE (return on common equity), Sales growth (percentage increase in sales from year $t-2$ to year $t-1$), Market to book, log Assets, Free Cash Flow (scaled to assets), and Leverage (value of debt to entity market value). P-values reported in parentheses (corresponding s.e. adjusted to clustering at advising bank level).

	All acquisitions		Inexperienced Bidders	
Dependent variable: 3-day CAR	(1)	(2)	(3)	(4)
Falling value d	-0.006		-0.012*	
	(0.308)		(0.070)	
Falling share d		-0.006**		-0.010**
		(0.040)		(0.048)
Relative size	-0.009	-0.009	-0.010	-0.010
	(0.297)	(0.268)	(0.268)	(0.266)
Bidder complexity	-0.000	-0.001	-0.000	-0.000
	(0.207)	(0.144)	(0.660)	(0.661)
Target complexity	0.001	0.001	0.002	0.002
	(0.292)	(0.252)	(0.213)	(0.160)
Same state d	0.002	0.003	-0.008	-0.007
	(0.656)	(0.578)	(0.271)	(0.280)
Unsolicited d	-0.003	-0.002	-0.001	-0.001
	(0.635)	(0.736)	(0.924)	(0.932)
Public Target d	-0.028***	-0.029***	-0.030***	-0.030***
	(0.000)	(0.000)	(0.003)	(0.003)
Merger d	0.000	0.000	-0.001	-0.000
	(0.951)	(0.954)	(0.927)	(0.962)
Cash consideration d	0.011***	0.011***	0.013**	0.013**
	(0.002)	(0.004)	(0.023)	(0.027)
Stock consideration d	-0.014**	-0.015**	-0.010	-0.010
	(0.033)	(0.026)	(0.274)	(0.276)
ROE	0.000	0.000	-0.000	-0.000
	(0.610)	(0.570)	(0.647)	(0.627)
Market to book	0.000	0.000	0.001	0.001
	(0.323)	(0.252)	(0.362)	(0.355)
Assets, log	-0.006***	-0.006***	-0.010***	-0.010***
	(0.000)	(0.000)	(0.000)	(0.000)
Sales growth	-0.012	-0.013*	-0.027**	-0.027**
	(0.100)	(0.087)	(0.021)	(0.020)
FCF	0.006	0.002	0.010	0.009
	(0.876)	(0.962)	(0.837)	(0.844)
Leverage	0.042***	0.040***	0.045**	0.045**
	(0.003)	(0.003)	(0.037)	(0.040)
Constant	0.054***	0.053***	0.078***	0.072**
	(0.00)	(0.00)	(0.00)	(0.01)
Year dummies	✓	✓	✓	✓
Observations	2944	2944	1149	1149
R^2-adjusted	0.074	0.075	0.073	0.074
p-val	0.000	0.000	0.000	0.000

* p<0.10, ** p<0.05, *** p<0.01

Table 3: Withdrawing negative CAR deals and advising bank's M&A business.
The table presents a probit regression of acquisition withdrawal dummy (conditional on negative 3 day bidder CAR at announcement) on the indicator variable of M&A advisor losing M&A business. For specifications (1) and (3) competitive position is measured as total dollar value of all US transactions, while for (2) and (4) it is the share of all transactions an advisor was involved in. Premium4wk is percentage premium of the offer price over the market price four weeks prior to the offer. Relative size is ratio of transaction value to bidder cap, Bidder (Target) complexity is the number of bidder (target) sic codes appearing in SDC. Same state, Public Target and Merger are self-explanatory dummies, Unsolicited dummy denotes transactions classified as unsolicited or hostile by SDC. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder's accounting variables are ROE (return on common equity), Sales growth (percentage increase in sales from year $t-2$ to year $t-1$), Market to book, log Assets, Free Cash Flow (scaled to assets), and Leverage (value of debt to entity market value). Marginal effects and p-values (in parentheses) are reported, corresponding s.e. adjusted to clustering at advising bank level.

	All acquisitions		Inexperienced Bidders	
Dependent variable: Withdrawal d	(1)	(2)	(3)	(4)
Falling value d	-0.086**		-0.108***	
	(0.04)		(0.00)	
Falling share d		-0.080***		-0.077**
		(0.00)		(0.04)
Premium4wk	-0.001	-0.000	0.000	0.001*
	(0.11)	(0.20)	(0.37)	(0.09)
Relative size	0.076***	0.071***	0.042	0.055
	(0.00)	(0.00)	(0.11)	(0.21)
Bidder complexity	0.003	0.003	-0.004	-0.007
	(0.39)	(0.44)	(0.61)	(0.40)
Target complexity	0.015***	0.016***	0.018**	0.023**
	(0.00)	(0.00)	(0.05)	(0.02)
Toehold d	0.210**	0.243**	0.863***	0.776***
	(0.03)	(0.01)	(0.00)	(0.00)
Same state d	-0.058**	-0.051*	0.009	0.012
	(0.03)	(0.05)	(0.83)	(0.82)
Unsolicited d	0.427***	0.420***	0.892***	0.753***
	(0.00)	(0.00)	(0.00)	(0.00)
Cash consideration d	0.028	0.026	0.057	0.064
	(0.58)	(0.60)	(0.56)	(0.54)
Stock consideration d	0.086**	0.092**	0.070**	0.090**
	(0.04)	(0.03)	(0.02)	(0.02)
ROE	-0.045	-0.045	-0.124	-0.120
	(0.37)	(0.36)	(0.24)	(0.23)
Market to book	0.002	0.002	0.010**	0.013**
	(0.67)	(0.70)	(0.03)	(0.02)
Assets, log	-0.022**	-0.023**	-0.033	-0.027
	(0.01)	(0.01)	(0.21)	(0.27)
Sales growth	-0.047	-0.049	-0.172**	-0.190***
	(0.32)	(0.30)	(0.02)	(0.01)
FCF	0.029	0.038	-0.033	-0.026
	(0.87)	(0.83)	(0.85)	(0.89)
Leverage	0.163*	0.147	0.307***	0.305***
	(0.09)	(0.13)	(0.00)	(0.00)
Year dummies	✓	✓	✓	✓
Observations	524	524	132	132
R^2-pseudo	0.255	0.259	0.425	0.400

(d) for discrete change of dummy variable from 0 to 1
* p<0.10, ** p<0.05, *** p<0.01

Table 4: Analyst coverage and the influence of advising bank's business on CAR.
The table presents an OLS cross-sectional regression of acquisition CAR on the indicator variable of M&A advisor losing the League Tables position and its interaction with Analyst coverage (CA) variable, representing number of following analysts in a year before acquisition. For specifications (1) and (3) competitive position is measured as total dollar value of all US transactions, while for (2) and (4) it is the share of all transactions an advisor was involved in. Relative size is ratio of transaction value to bidder cap, Bidder (Target) complexity is the number of bidder (target) sic codes appearing in SDC. Same state, Public Target and Merger are self-explanatory dummies, Unsolicited dummy denotes transactions classified as unsolicited or hostile by SDC. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder's accounting variables are ROE (return on common equity), Sales growth (percentage increase in sales from year $t-2$ to year $t-1$), Market to book, log Assets, Free Cash Flow (scaled to assets), and Leverage (value of debt to entity market value). P-values reported in parentheses (corresponding s.e. adjusted to clustering at advising bank level).

	All acquisitions		Inexperienced Bidders	
Dependent variable: 3-day CAR	(1)	(2)	(3)	(4)
Falling value d	-0.004		-0.016**	
	(0.40)		(0.05)	
Falling value*CA	0.000		0.001	
	(0.30)		(0.17)	
Falling share d		-0.011**		-0.015**
		(0.01)		(0.02)
Falling share*CA		0.001**		0.001*
		(0.04)		(0.09)
Covering analysts (CA)	-0.000**	-0.000***	-0.000	-0.000
	(0.01)	(0.00)	(0.22)	(0.17)
Relative size	-0.009	-0.009	-0.010	-0.010
	(0.27)	(0.27)	(0.27)	(0.27)
Bidder complexity	-0.000	-0.000	-0.000	-0.000
	(0.20)	(0.21)	(0.65)	(0.71)
Target complexity	0.001	0.001	0.002	0.002
	(0.26)	(0.25)	(0.20)	(0.16)
Same state d	0.003	0.003	-0.008	-0.008
	(0.59)	(0.60)	(0.28)	(0.28)
Unsolicited d	-0.002	-0.002	-0.001	-0.000
	(0.78)	(0.81)	(0.96)	(0.98)
Public Target d	-0.029***	-0.029***	-0.030***	-0.030***
	(0.00)	(0.00)	(0.00)	(0.00)
Merger d	-0.000	0.000	-0.001	0.000
	(0.96)	(0.93)	(0.94)	(0.99)
Cash consideration d	0.011***	0.010***	0.013**	0.013**
	(0.00)	(0.00)	(0.03)	(0.03)
Stock consideration d	-0.014**	-0.014**	-0.010	-0.010
	(0.03)	(0.03)	(0.27)	(0.28)
ROE	0.000	0.000	-0.000	-0.000
	(0.52)	(0.58)	(0.64)	(0.63)
Market to Book	0.001	0.001	0.001	0.001
	(0.22)	(0.22)	(0.36)	(0.36)
Assets, log	-0.006***	-0.006***	-0.010***	-0.010***
	(0.00)	(0.00)	(0.00)	(0.00)
Sales growth	-0.013*	-0.013*	-0.027**	-0.027**
	(0.08)	(0.07)	(0.02)	(0.02)
FCF	0.003	0.002	0.010	0.009
	(0.94)	(0.96)	(0.84)	(0.85)
Leverage	0.039***	0.038***	0.044**	0.043**
	(0.00)	(0.00)	(0.04)	(0.05)
Constant	0.051***	0.054***	0.078***	0.073**
	(0.00)	(0.00)	(0.00)	(0.01)
Year dummies	✓	✓	✓	✓
Observations	2944	2944	1149	1149
R^2-adjusted	0.063	0.064	0.072	0.073
p-val	0.000	0.000	0.000	0.000

* p<0.10, ** p<0.05, *** p<0.01

Table 5: Analyst coverage and withdrawals of negative CAR deals.

The table presents a probit regression of acquisition withdrawal dummy on the indicator variable of M&A advisor losing M&A business and its interaction with Analyst coverage (CA) variable, representing number of following analysts in a year before acquisition. The sample is constructed conditional on negative 3 day bidder CAR at announcement and observing bid premium. For specifications (1) and (3) competitive position is measured as total dollar value of all US transactions, while for (2) and (4) it is the share of all transactions an advisor was involved in. Premium4wk is percentage premium of the offer price over the market price four weeks prior to the offer. Relative size is ratio of transaction value to bidder cap, Bidder (Target) complexity is the number of bidder (target) sic codes appearing in SDC. Same state, Public Target and Merger are self-explanatory dummies, Unsolicited dummy denotes transactions classified as unsolicited or hostile by SDC. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder's accounting variables are ROE (return on common equity), Sales growth (percentage increase in sales from year $t-2$ to year $t-1$), Market to book, log Assets, Free Cash Flow (scaled to assets), and Leverage (value of debt to entity market value). Marginal effects and p-values (in parentheses) are reported, corresponding s.e. adjusted to clustering at advising bank level.

	All acquisitions		Inexperienced Bidders	
Dependent variable: Withdrawal d	(1)	(2)	(3)	(4)
Falling value d	-0.121***		-0.271***	
	(0.01)		(0.00)	
Falling value*CA	0.004*		0.010**	
	(0.08)		(0.03)	
Falling share d		-0.122***		-0.175**
		(0.00)		(0.05)
Falling share*CA		0.005*		0.013***
		(0.10)		(0.01)
Covering analysts (CA)	-0.003	-0.003	-0.012***	-0.014***
	(0.10)	(0.16)	(0.00)	(0.00)
Premium4wk	-0.001	-0.000	-0.001	-0.001
	(0.12)	(0.19)	(0.25)	(0.27)
Relative size	0.079***	0.071***	0.100***	0.096***
	(0.00)	(0.00)	(0.00)	(0.00)
Bidder complexity	0.004	0.003	0.005	-0.001
	(0.35)	(0.41)	(0.62)	(0.92)
Target complexity	0.014***	0.016***	0.007	0.013
	(0.00)	(0.00)	(0.58)	(0.34)
Toehold d	0.199**	0.226**	0.834***	0.740***
	(0.04)	(0.01)	(0.00)	(0.00)
Same state d	-0.058**	-0.055**	0.012	-0.009
	(0.03)	(0.03)	(0.80)	(0.85)
Same sic2 d	0.044	0.045	0.110	0.086
	(0.18)	(0.16)	(0.15)	(0.26)
Unsolicited d	0.434***	0.441***	0.552***	0.516***
	(0.00)	(0.00)	(0.00)	(0.00)
Cash consideration d	0.030	0.025	0.258*	0.237*
	(0.54)	(0.60)	(0.06)	(0.06)
Stock consideration d	0.089**	0.100**	0.346***	0.335***
	(0.04)	(0.02)	(0.00)	(0.00)
ROE	-0.038	-0.040	-0.125	-0.167*
	(0.44)	(0.42)	(0.12)	(0.10)
Market to Book	0.002	0.002	0.009	0.003
	(0.70)	(0.71)	(0.60)	(0.85)
Assets, log	-0.021**	-0.020**	-0.025	-0.010
	(0.01)	(0.01)	(0.28)	(0.49)
Sales growth	-0.047	-0.053	-0.170	-0.180
	(0.31)	(0.25)	(0.13)	(0.15)
FCF	0.031	0.013	0.350	0.413
	(0.86)	(0.94)	(0.37)	(0.33)
Leverage	0.155	0.144	0.184	0.132
	(0.11)	(0.14)	(0.38)	(0.51)
Year dummies	✓	✓	✓	✓
Observations	524	524	169	169
R^2-pseudo	0.261	0.266	0.331	0.308

d for discrete change of dummy variable from 0 to 1

* p<0.10, ** p<0.05, *** p<0.01

Table 6: Bidder stock run-up and advising bank's M&A business dynamics.
The table presents an OLS cross-sectional regression of bidder stock run-up on the indicator variable of M&A advisor losing the League Tables position relative to the previous year, and control variables. Dependent variable: 60 trading day target stock price run-up (up to the 4th trading day prior to acquisition announcement). For specifications (1) and (3) competitive position is measured as total dollar value of all US transactions, while for (2) and (4) it is the share of all transactions an advisor was involved in. Relative size is ratio of transaction value to bidder cap, Toehold dummy indicates bidder's holdings of at least 3% of the target prior to announcement, Bidder (Target) complexity is the number of bidder (target) sic codes appearing in SDC. Same state, Same sic2, and Merger are self-explanatory dummies, Unsolicited dummy denotes transactions classified as unsolicited or hostile by SDC. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder's accounting variables are ROE (return on common equity), Sales growth (percentage increase in sales from year $t-2$ to year $t-1$), Market to book, log Assets, Free Cash Flow (scaled to assets), and Leverage (value of debt to entity market value). P-values reported in parentheses (corresponding s.e. adjusted to clustering at advising bank level).

	All acquisitions		Inexperienced Bidders	
Dependent variable: Bidder run-up	(1)	(2)	(3)	(4)
Falling value d	0.018**		0.038	
	(0.021)		(0.103)	
Falling share d		0.029***		0.050***
		(0.000)		(0.006)
Relative size	0.018	0.018	-0.007	-0.007
	(0.170)	(0.161)	(0.652)	(0.673)
Toehold d	-0.044	-0.043	-0.083	-0.081
	(0.108)	(0.111)	(0.140)	(0.160)
Bidder complexity	0.000	0.000	0.005*	0.005*
	(0.886)	(0.863)	(0.066)	(0.065)
Target complexity	-0.002	-0.002	-0.005	-0.005
	(0.461)	(0.406)	(0.296)	(0.291)
Same state d	0.006	0.005	0.024	0.023
	(0.666)	(0.709)	(0.367)	(0.390)
Same sic2 d	0.016**	0.016**	0.030*	0.032*
	(0.046)	(0.044)	(0.087)	(0.069)
Unsolicited d	0.002	0.002	0.011	0.019
	(0.940)	(0.917)	(0.856)	(0.746)
Merger d	0.004	0.003	0.021	0.018
	(0.592)	(0.670)	(0.286)	(0.344)
Stock consideration d	0.006	0.006	-0.018	-0.017
	(0.727)	(0.728)	(0.553)	(0.580)
Cash consideration d	0.004	0.005	0.003	0.006
	(0.610)	(0.569)	(0.883)	(0.728)
ROE	-0.002***	-0.002***	-0.011	-0.010
	(0.001)	(0.003)	(0.515)	(0.549)
Market to book	0.001	0.001	0.002	0.002
	(0.508)	(0.482)	(0.306)	(0.314)
Assets, log	-0.003	-0.003	-0.007	-0.007
	(0.171)	(0.176)	(0.238)	(0.252)
Sales growth	-0.006	-0.005	-0.028	-0.026
	(0.708)	(0.736)	(0.284)	(0.313)
FCF	0.097*	0.100*	-0.040	-0.037
	(0.067)	(0.055)	(0.647)	(0.666)
Leverage	0.083***	0.084***	0.135**	0.136**
	(0.004)	(0.003)	(0.019)	(0.017)
Constant	-0.066*	-0.065*	-0.036	-0.050
	(0.057)	(0.063)	(0.661)	(0.527)
Year dummies	✓	✓	✓	✓
Observations	2936	2936	964	964
R^2-adjusted	0.012	0.015	0.001	0.006
p-val	0.000	0.000	0.000	0.000

* p<0.10, ** p<0.05, *** p<0.01

Table 7: Target stock run-up and advising bank's M&A business dynamics.
The table presents an OLS cross-sectional regression of target stock run-up on the indicator variable of M&A advisor losing the League Tables position relative to the previous year, and control variables. Dependent variable: 60 trading day bidder stock price run-up (up to the 4th trading day prior to acquisition announcement). For specifications (1) and (3) competitive position is measured as total dollar value of all US transactions, while for (2) and (4) it is the share of all transactions an advisor was involved in. Relative size is ratio of transaction value to bidder cap, Toehold dummy indicates bidder's holdings of at least 3% of the target prior to announcement, Bidder (Target) complexity is the number of bidder (target) sic codes appearing in SDC. Same state, Same sic2, and Merger are self-explanatory dummies, Unsolicited dummy denotes transactions classified as unsolicited or hostile by SDC. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder's accounting variables are ROE (return on common equity), Sales growth (percentage increase in sales from year $t-2$ to year $t-1$), Market to book, log Assets, Free Cash Flow (scaled to assets), and Leverage (value of debt to entity market value). P-values reported in parentheses (corresponding s.e. adjusted to clustering at advising bank level).

	All acquisitions		Inexperienced Bidders	
Dependent variable: Target run-up	(1)	(2)	(3)	(4)
Falling value d	-0.063**		-0.117**	
	(0.027)		(0.042)	
Falling share d		-0.027		-0.073*
		(0.184)		(0.069)
Relative size	-0.042	-0.044	-0.026	-0.029
	(0.173)	(0.153)	(0.601)	(0.565)
Toehold d	-0.031	-0.026	-0.052	-0.046
	(0.484)	(0.561)	(0.518)	(0.587)
Bidder complexity	-0.001	-0.001	-0.006	-0.005
	(0.728)	(0.651)	(0.169)	(0.229)
Target complexity	-0.000	0.000	0.006	0.008*
	(0.887)	(0.928)	(0.173)	(0.082)
Same state d	-0.014	-0.011	-0.016	-0.012
	(0.512)	(0.607)	(0.631)	(0.696)
Same sic3 d	0.001	-0.002	-0.003	-0.004
	(0.973)	(0.938)	(0.956)	(0.930)
Unsolicited d	-0.035	-0.036	0.013	0.003
	(0.132)	(0.124)	(0.763)	(0.934)
Merger d	0.123***	0.125***	0.054	0.053
	(0.002)	(0.002)	(0.341)	(0.350)
Stock consideration d	-0.018	-0.019	-0.066	-0.072
	(0.473)	(0.445)	(0.210)	(0.172)
Cash consideration d	0.021	0.022	0.002	0.005
	(0.222)	(0.202)	(0.964)	(0.914)
ROE	0.010***	0.009***	-0.040	-0.054
	(0.000)	(0.000)	(0.424)	(0.299)
Market to Book	0.004	0.004	0.013	0.014*
	(0.272)	(0.204)	(0.103)	(0.067)
Assets, log	0.000	-0.001	-0.001	-0.003
	(0.997)	(0.923)	(0.958)	(0.851)
Sales growth	-0.017	-0.018	0.057	0.051
	(0.597)	(0.563)	(0.396)	(0.469)
FCF	0.185*	0.191*	0.312***	0.350***
	(0.074)	(0.057)	(0.007)	(0.002)
Leverage	0.050	0.050	0.048	0.044
	(0.307)	(0.306)	(0.603)	(0.647)
Constant	-0.070	-0.109	-0.143	-0.193
	(0.642)	(0.443)	(0.625)	(0.501)
Year dummies	✓	✓	✓	✓
Observations	962	962	348	348
R^2-adjusted	0.028	0.023	0.019	0.013
p-val	0.000	0.000	0.000	0.000

* p<0.10, ** p<0.05, *** p<0.01

Table 8: Mode of payment in acquisitions and advising bank's M&A business.
The table presents a probit regression of stock consideration dummy (taking value of one if stock constitutes at least 80% of total consideration) on the indicator variable of M&A advisor losing M&A business. For specifications (1) and (3) competitive position is measured as total dollar value of all US transactions, while for (2) and (4) it is the share of all transactions an advisor was involved in. Relative size is ratio of transaction value to bidder cap, Bidder (Target) complexity is the number of bidder (target) sic codes appearing in SDC. Same state, Public Target and Merger are self-explanatory dummies, Unsolicited dummy denotes transactions classified as unsolicited or hostile by SDC. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder's accounting variables are ROE (return on common equity), Sales growth (percentage increase in sales from year $t-2$ to year $t-1$), Market to book, log Assets, Free Cash Flow (scaled to assets), and Leverage (value of debt to entity market value). Marginal effects and p-values (in parentheses) are reported, corresponding s.e. adjusted to clustering at advising bank level.

	All acquisitions		Inexperienced Bidders	
Dependent var: Stock payment d	(1)	(2)	(3)	(4)
Falling value d	0.039**		0.061**	
	(0.028)		(0.034)	
Falling share d		0.019*		0.037**
		(0.085)		(0.048)
Toehold d	-0.016	-0.017	-0.044	-0.044
	(0.573)	(0.549)	(0.369)	(0.360)
Bidder complexity	-0.004**	-0.004**	-0.008*	-0.009*
	(0.037)	(0.041)	(0.094)	(0.093)
Target complexity	0.002	0.002	-0.004	-0.005
	(0.333)	(0.404)	(0.575)	(0.436)
Same state d	0.077***	0.076***	0.082***	0.081***
	(0.000)	(0.000)	(0.010)	(0.009)
Same sic2 d	-0.009	-0.009	0.003	0.004
	(0.593)	(0.598)	(0.903)	(0.874)
Unsolicited d	-0.091***	-0.091***	-0.097***	-0.097***
	(0.000)	(0.000)	(0.000)	(0.000)
Merger d	0.251***	0.250***	0.263***	0.262***
	(0.000)	(0.000)	(0.000)	(0.000)
FCF	-0.159***	-0.158***	-0.148***	-0.145***
	(0.000)	(0.000)	(0.004)	(0.005)
ROE	-0.002	-0.002	-0.002	-0.002
	(0.609)	(0.600)	(0.303)	(0.297)
Market to Book	0.010***	0.010***	0.015***	0.015**
	(0.001)	(0.001)	(0.008)	(0.011)
Assets, log	-0.010**	-0.009**	-0.023***	-0.022***
	(0.028)	(0.032)	(0.001)	(0.002)
Sales growth	0.017	0.017	0.016	0.016
	(0.212)	(0.218)	(0.484)	(0.508)
Leverage	-0.116***	-0.116***	-0.040	-0.042
	(0.000)	(0.000)	(0.515)	(0.496)
Year dummies	✓	✓	✓	✓
R^2-pseudo	0.308	0.307	0.292	0.290
Observations	3258	3258	1227	1227
p-val	0.000	0.000	0.000	0.000

(d) for discrete change of dummy variable from 0 to 1
* p<0.10, ** p<0.05, *** p<0.01

Table 9: Bidder's CAR when advisory bank is former underwriter of the bidder.
The table presents an OLS cross-sectional regression of acquisition CAR on the indicator variable of M&A advisor losing the League Tables position relative to the previous year in the sample of acquisitions, where a former IPO underwriter is hired as M&A advisor within two years after IPO. For specifications (1) and (3) competitive position is measured as total dollar value of all US transactions, while for (2) and (4) it is the share of all transactions an advisor was involved in. Relative size is ratio of transaction value to bidder cap, Bidder (Target) complexity is the number of bidder (target) sic codes appearing in SDC. Same sic2, Public Target and Merger are self-explanatory dummies, Unsolicited dummy denotes transactions classified as unsolicited or hostile by SDC. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder's accounting variables are ROE (return on bidder's common equity), Sales growth (percentage increase in sales from year $t-2$ to year $t-1$), Market to book, log Assets, Free Cash Flow (scaled to assets), and Leverage (value of debt to entity market value). P-values reported in parentheses (corresponding s.e. adjusted to clustering at advising bank level).

	Acquisitions with relationship M&A advisor	
Dependent variable: 3-day CAR	(1)	(2)
Falling value d	-0.048*	
	(0.08)	
Falling share d		-0.069***
		(0.00)
Relative size	0.028**	0.026**
	(0.05)	(0.02)
Bidder complexity	0.005	0.004
	(0.19)	(0.21)
Target complexity	-0.002	0.006
	(0.81)	(0.31)
Same sic2	0.035	0.041**
	(0.11)	(0.03)
Unsolicited d	0.008	-0.036
	(0.89)	(0.50)
Public Target d	-0.041	-0.021
	(0.17)	(0.41)
Merger d	0.026	-0.004
	(0.38)	(0.88)
Cash consideration d	0.087***	0.060**
	(0.00)	(0.01)
Stock consideration d	0.002	0.005
	(0.94)	(0.86)
ROE	0.009	-0.002
	(0.58)	(0.93)
Market to Book	-0.000	-0.002
	(0.79)	(0.43)
Assets, log	-0.009	-0.010
	(0.31)	(0.24)
Sales growth	0.004	0.002
	(0.81)	(0.91)
FCF	-0.022	0.009
	(0.78)	(0.90)
Leverage	0.108	0.021
	(0.86)	(0.73)
Constant	-0.099	-0.093
	(0.41)	(0.35)
Year dummies	✓	✓
Observations	165	165
R^2-adjusted	0.068	0.128
p-val	0.081	0.015

* p<0.10, ** p<0.05, *** p<0.01

Table 10: Bidder's CAR and advising bank's M&A business dynamics (lagged).
The table presents an OLS cross-sectional regression of acquisition CAR on the indicator variable of M&A advisor losing the League Tables position in previous three quarters relative to preceding four quarters, and control variables. For specifications (1) and (3) competitive position is measured as total dollar value of all US transactions, while for (2) and (4) it is the share of all transactions an advisor was involved in. Relative size is ratio of transaction value to bidder cap, Bidder (Target) complexity is the number of bidder (target) sic codes appearing in SDC. Same state, Public Target and Merger are self-explanatory dummies, Unsolicited dummy denotes transactions classified as unsolicited or hostile by SDC. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder's accounting variables are ROE (return on common equity), Sales growth (percentage increase in sales from year $t-2$ to year $t-1$), Market to book, log Assets, Free Cash Flow (scaled to assets), and Leverage (value of debt to entity market value). P-values are in parentheses (corresponding s.e. adjusted to clustering at advising bank level).

	All acquisitions		Inexperienced Bidders	
Dependent variable: 3-day CAR	(1)	(2)	(3)	(4)
Qrt value falling d	-0.008*		-0.018***	
	(0.06)		(0.00)	
Qrt share falling d		-0.006*		-0.008
		(0.10)		(0.14)
Relative size	-0.010	-0.010	-0.010	-0.010
	(0.27)	(0.27)	(0.29)	(0.28)
Bidder complexity	-0.000	-0.000	-0.000	-0.000
	(0.16)	(0.17)	(0.75)	(0.74)
Target complexity	0.001	0.001	0.002	0.002
	(0.31)	(0.30)	(0.17)	(0.18)
Same state d	0.002	0.003	-0.008	-0.009
	(0.64)	(0.63)	(0.27)	(0.25)
Unsolicited d	-0.002	-0.002	-0.002	-0.002
	(0.82)	(0.81)	(0.90)	(0.86)
Public Target d	-0.029***	-0.029***	-0.029***	-0.028***
	(0.00)	(0.00)	(0.01)	(0.01)
Merger d	0.000	0.000	-0.002	-0.002
	(0.97)	(0.96)	(0.82)	(0.83)
Cash consideration d	0.011***	0.011***	0.014**	0.014**
	(0.00)	(0.00)	(0.02)	(0.01)
Stock consideration d	-0.013*	-0.014**	-0.008	-0.008
	(0.05)	(0.04)	(0.43)	(0.37)
ROE	0.000	0.000	-0.000	-0.000
	(0.49)	(0.48)	(0.69)	(0.74)
Market to Book	0.000	0.000	0.002*	0.002
	(0.82)	(0.87)	(0.09)	(0.10)
Assets, log	-0.006***	-0.006***	-0.011***	-0.010***
	(0.00)	(0.00)	(0.00)	(0.00)
Sales growth	-0.011	-0.011	-0.027**	-0.027**
	(0.14)	(0.15)	(0.02)	(0.02)
FCF	-0.003	-0.004	0.023	0.020
	(0.95)	(0.92)	(0.62)	(0.67)
Leverage	0.037***	0.036***	0.051**	0.051**
	(0.01)	(0.01)	(0.02)	(0.03)
Constant	0.058***	0.054***	0.083***	0.069**
	(0.00)	(0.01)	(0.01)	(0.02)
Year dummies	✓	✓	✓	✓
Observations	2880	2880	1120	1120
R^2-adjusted	0.062	0.062	0.077	0.074
p-val	0.000	0.000	0.000	0.000

p<0.10, ** p<0.05, *** p<0.01

Table 11: Bidder's CAR and "exogenous" bank income shocks.

The table presents an OLS cross-sectional regression of acquisition CAR on the indicator variable equal to one if on annual basis the shock to bank profits (exogenous to unobserved M&A skill) becomes more negative. For specifications (1) and (3) the shock is the residual from regressing total bank earnings on the number of advised M&A transactions (with bank and year fixed effects), while for (2) and (4) the shock is a change in trading income relative to the previous year. Bidder (Target) complexity is the number of bidder (target) sic codes appearing in SDC. Same state, Public Target and Merger are self-explanatory dummies, Unsolicited dummy denotes transactions classified as unsolicited or hostile by SDC. Cash (stock) consideration dummy equals one if cash (stock) constituted at least 80% of total consideration. Bidder's accounting variables are ROE (return on common equity), Sales growth (percentage increase in sales from year $t-2$ to year $t-1$), Market to book, log Assets, Free Cash Flow (scaled to assets), and Leverage (value of debt to entity market value). P-values are in parentheses (corresponding s.e. adjusted to clustering at advising bank level).

	All acquisitions		Inexperienced Bidders	
Dependent variable: 3-day CAR	(residual income)	(trading income)	(residual income)	(trading income)
Residual income negative d	-0.011**		-0.015*	
	(0.02)		(0.08)	
Trading income negative d		-0.010		-0.020*
		(0.13)		(0.10)
Relative size	-0.014*	-0.014*	-0.011	-0.011
	(0.10)	(0.09)	(0.24)	(0.24)
Bidder complexity	-0.000	-0.000	0.000	0.000
	(0.32)	(0.56)	(0.97)	(0.95)
Target complexity	0.001*	0.001	0.003**	0.003***
	(0.07)	(0.13)	(0.02)	(0.01)
Same state d	0.004	0.006	-0.010	-0.006
	(0.60)	(0.40)	(0.23)	(0.52)
Unsolicited d	0.002	0.005	0.004	0.003
	(0.78)	(0.56)	(0.80)	(0.84)
Public Target d	-0.029***	-0.031***	-0.041***	-0.043***
	(0.00)	(0.00)	(0.00)	(0.00)
Merger d	-0.001	-0.000	0.001	0.001
	(0.86)	(0.96)	(0.91)	(0.91)
Cash consideration d	0.012***	0.012**	0.020**	0.019**
	(0.01)	(0.01)	(0.01)	(0.01)
Stock consideration d	-0.013	-0.013	-0.016	-0.019
	(0.13)	(0.14)	(0.25)	(0.14)
ROE	-0.008	-0.010	-0.034	-0.036
	(0.45)	(0.41)	(0.23)	(0.24)
Market to Book	0.001	0.000	0.002	0.001
	(0.44)	(0.56)	(0.29)	(0.37)
Assets, log	-0.005***	-0.005***	-0.010**	-0.009*
	(0.00)	(0.00)	(0.02)	(0.05)
Sales growth	-0.010	-0.011	-0.010	-0.007
	(0.24)	(0.19)	(0.40)	(0.53)
FCF	0.037	0.033	0.053	0.046
	(0.45)	(0.51)	(0.34)	(0.43)
Leverage	0.043**	0.036**	0.051	0.036
	(0.01)	(0.04)	(0.11)	(0.31)
Constant	0.070***	0.075***	0.081**	0.098***
	(0.00)	(0.00)	(0.02)	(0.00)
Year dummies	✓	✓	✓	✓
Observations	1915	1841	697	671
R^2-adjusted	0.080	0.089	0.136	0.156
p-val	0.000	0.000	0.000	0.000

* p<0.10, ** p<0.05, *** p<0.01

The Value of Dual-Class Shares in Switzerland*

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Abstract

We analyze the effect of dual-class structures on the valuation of Swiss companies. Switzerland presents an ideal setting for studying deviations from the one share-one vote rule, because of the traditional popularity of multiple share classes. After accounting for self-selection into dual or single share categories, we find a strong positive effect of dual-class shares on firm value. The analysis of acquisition activities reveals that in the recent years or among firms with low and moderate market to book values the returns to acquisitions improved due to the dual-class structure, and generally dual-class firms do not perform worse in acquisitions.

JEL Codes: G32, G34

Key words: Dual-class shares, Insider Ownership, Firm Value, Acquisitions.

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1 Introduction

The efficiency of a dual-class structure from the perspective of minority shareholders has been actively debated for more than a decade. The main question is whether efficiency is improved in companies with a unified share structure as compared to those of dual-class firms, or whether the dual structure creates impediments to effective governance and value creation, which facilitates the extraction of private benefits by corporate insiders at the expense of minority shareholders and thus depresses corporate valuation. The reported evidence is quite diverse; it covers distinct universes of companies and different time periods with main focus on U.S. data. In the dominant view the separation of control and cash flow rights distorts corporate governance and may lead to a deprivation of value at the expense of minority shareholders. For example, recent works of Gompers, Ishii, and Metrick (2008) and Masulis, Wang, and Xie (2009) show strong evidence against the dual structure.[1] However, this result does not seem to generalize: empirical studies conducted on other samples yielded overall inconclusive results as in Adams and Ferreira (2008), who deliver an extensive review of empirical findings in the one share-one vote literature. Similarly, various theory papers show that dual-class structures may come as an effective instrument solving various agency and control problems.[2]

In our paper we show that, unlike in the previous studies based on the U.S. data, in Switzerland the dual-class structure improves the valuation of firms, once sample selection is corrected. At the same time, as in the previous research, least squares regression estimations show a negative association between valuation and dual-class status, which underscores that accounting for the non-random choice of the share structure is crucial for the correct evaluation of its efficiency. Our further results show that the acquisition practices of dual-class firms improved over time and in the second part of our sample (2000-2008) were superior to those of single-class firms.

[1] One caveat here is that samples of U.S. firms feature a fairly small proportion of companies with dual structure, which renders it to be an exceptional rather than standard corporate practice in North America.

[2] See Burkart and Lee (2008) and the review below.

We link this result to improved corporate transparency requirements on the Swiss market in the 1990s, as well as, possibly, to the overall traditional popularity of dual-class shares as a mean to preserve long-term control and commitment in Swiss companies.

In the U.S. a wide range of corporate capital structure choices are available, so the dual capital structure appears to be just one of many alternative options for insiders who are inclined to keep tight control of the firms they established or took public.[3] Furthermore, the costs of keeping such a structure in terms of less favorable access to credit and discount on issued securities might be substantial due to a negative attitude of institutional investors to the dual-class structure, thus steering most firms away from this alternative of financial architecture. Investors might plausibly perceive potential corporate governance weaknesses in such firms and require additional discount on dual firm debt and stock (see Giannetti and Simonov, 2006), which in turn affects ownership structure choices. Thus, firms that opt for dual share are likely to differ considerably from other firms.

We constructed a dataset of 145 firms listed on SWX between 1992 and 2008, and tracked their acquisition activities. The acquisition efficiency improved significantly in dual-class firms over the sample period, indicating that after numerous improvements in reporting requirements took place, the effect of dual structures on acquisition practices in Switzerland became positive. We collected suitable variables that allow us to model the selection of firms into dual and single share subsamples when estimating the effect of the dual-class on shareholder value. The Heckman estimation model results show that the dual structure positively affects firm value. The results show that failure to account for the endogenously driven sample selection leads to erroneous results: simple OLS regression estimates indicate a strong negative association between a dual share structure and shareholder value, measured as a ratio of market value of equity to its book value. Such findings should not lead to a conclusion that dual structure causes

[3]Other measures vary from the state of incorporation, which determines the stringency of antitakeover laws, to abundant control mechanisms in corporate by-laws and employee participation schemes that effectively obstruct control challenges over the company.

lower firm value: important systematic differences between dual and single-class firms need to be taken into account, and a simple OLS regression results can not be interpreted causally.

As Bertrand et al (2002) point out in an econometrically similar setting, when regressing efficacy of firms on the extent of cash flow rights of a controlling shareholder, "the [documented positive] cross-sectional relationship is not a test of tunneling since it could also result from differences in preexisting efficiency or any number of other unobservable factors." For example, firms belonging to different business sectors may have different inclination to keep the dual structure, and profitability levels may differ among sectors as well, so simple comparison of efficiency or valuation may capture sector-specific differences, rather than the actual effect of the dual share. When the sample selection is corrected for in our sample, the results change dramatically, and the dual structure has a positive impact on valuation.

Interestingly, recent works of Masulis, Wang and Xie (2009) and Gompers, Ishii and Metrick (2008) find parallel results in their OLS results and regressions accounting for sample selection and endogeneity issues (IV or Heckman two-stage regressions): the effect of cash flow and voting rights separation is negative in both types of regressions, while in the latter study the effect of the dual class dummy itself is insignificant. Thus, their sample selection-corrected results are not materially different from simple OLS estimation, in which by assumption the dual structure is treated as being randomly allocated among firms.

This strong divergence with our estimation results may emphasize that dual structure firms that account for about 6% of all U.S. firms can be systematically different from the Swiss dual-class share firms that used to comprise almost a half of all firms listed in Switzerland in the early 1990s and still account for about a fifth of the firms on the stock market. On the other hand, it could also be that the instruments employed to correct the selection do not completely resolve the problems appearing due to the endogenous choice of the dual-class structure.[4] In this case, the reported negative effect is not due to the dual structure per se, but rather it manifests fundamental differences between these two sets of companies. The availability of valid

[4]We address this point in detail in Section 4.

instruments is a crucial issue, and the manageable sample size of firms listed in Switzerland allows us to collect relevant variables for correcting the sample selection problem.

Our results on valuation and acquisition practices among the two groups of firms demonstrate that criticism of the dual-class structure does not have strong grounds in the case of Switzerland, where reporting requirements and the overall level of investor protection have improved significantly in recent years, while the general business environment has traditionally attached high importance to such values as reliability and reputation. Thus, the implications of our findings imply that restricting the availability of multiple classes of shares in Switzerland might not be necessary, and certainly could not have lead to the desired result of protecting the interests of minority shareholders.

This paper contributes to an extensive literature on insider ownership and cash flow-control rights separation, where the dominant conclusion was that the effect of dual-class shares on firm value is negative. Various studies show that deviations from the one share-one vote paradigm depress the firm value due to a less prudent use of excess cash, poorer executive compensation practices and a less effective market of external corporate control (Grossman and Hart, 1988, Harris and Raviv, 1988, Bebchuk, Kraakman and Triantis, 2000). By examining largest corporations in East Asia, Claessens et al (2002) show that firm value increases with the case-flow ownership of the largest shareholder, but falls when its control rights exceed the cash-flow rights.

Gompers, Ischii and Metrick (2008) document that the separation of voting and cash flow rights creates an entrenchment problem and negatively affects the firm performance. At the same time, the abnormal returns between 1995 and 2003 on portfolios constructed of dual-class and single-class firms do not feature significant differences, showing that investors had possibly incorporated possible differences in performance into the stock price already before 1993. Masulis Wang, and Xie (2009) show that in the U.S. the divergence between cash and control rights leads to the loss of efficiency and possibly to a substantial value deprivation from dual-class firms. They document that the marginal value of cash is lower, excessive CEO pay is

higher, acquisitions returns are worse and larger capital expenditures are valued less in firms with larger cash flow-control rights separation. It is worth noting that while the overall conclusion of these two papers hints at a low efficiency of a dual-class structure, most of their results are based on examining the gap between cash flow rights and control within the sample of dual-class firms only. In other words, their major results show that among dual-class firms, the efficiency is lowest in those with the highest separation between ownership and control of insiders.[5]

In contrast to these studies, Bauguess and Stegemoller (2008) find positive relation between the governance index (Gompers et al) representing managerial power and the probability to be acquired, thus in their sample firms with higher managerial entrenchment are acquired more often. At the same time they document in various specifications no relation or positive relationship between the index level of acquiring firms and the bidder abnormal returns at acquisitions in their sample of S&P500 firms. These results are at odds with significant negative relation between bidder anti-takeover protection and bidder returns in an analogous study by Masulis et al (2007). Bauguess and Stegemoller further report that the dummy of dual class has no significant influence on abnormal returns at acquisitions in their sample. Along similar lines, Bauguess et al. (2007) find that firms adopting dual class structures are acquired more frequently and at higher premiums relative to their peers. Furthermore, Amoako-Adu and Smith (2001) find that within 10 years following the IPO on the Toronto Stock Exchange control changes happened in two thirds of their dual-class firms sample, which contradicts the established perception that managers use the dual-class to entrench own position within a company. Such differences in outcomes underscore that the results on negative influence of restrictive measures in ownership structure may be sample-specific, and that generalizations to other environments may be limited.

Various papers tried to analyze the effect of dual-class unifications on firm performance,

[5]It is interesting to compare these results with findings of Morck, Shleifer, and Vishny (1988) that the relationship between insider ownership and firm value is non-monotonic, with positive effect of board ownership over the range between zero and five percent and negative effect over the range of five to twenty five percent.

and the reported evidence from various countries is quite inconclusive. For example, Smart, Thirumalai and Zutter (2007) find that unifications of dual shares in the U.S. lead to value gains, explaining this with weaker governance in dual-class firms. On the other hand, both the introduction and abolishment of dual shares result in positive stock price effect in the Ang and Megginson (1989) sample of firms listed at the London Stock Exchange. We must recognize that the decision to abolish the dual share structure - much like any other capital structure decision - is highly endogenous in that the decision-makers can strategically choose the moment to change the equity structure. They may choose to reorganize when the stock price reaction is expected to be most appreciative of the announcement. Moreover, in many cases the abolition of dual shares is a result of tensions between holders of superior and inferior shares, and the overall focus is on redistribution of control among insiders, while average wealth effect may be quite small.

The endogenous choice between the two modes of equity structure is a critically important, albeit not sufficiently studied issue. As Lehn et al (1990) argue the dual-class recapitalization and going private are substitute options for inside shareholders that desire to consolidate control over the firm. Different firms face different costs and benefits associated with either form of consolidation, and the controlling shareholders may optimally choose the dual class to *reduce* the cost of capital (as compared to the option of going private). They show that firms choose to recapitalize their equity to introduce dual-class structure when the growth opportunities are good, and that recapitalizations are often followed by new equity issues.[6] We address the issue of endogenous equity structure choice when developing our hypotheses, and then when applying Heckman estimation techniques in Section 5.2.

We proceed with describing the peculiarities of the Swiss market and relevant regulations in Section 2. Then we develop our hypotheses in Section 3 and describe our data sample in Section 4. We report our results on valuation in Section 5 and the analysis of acquisition activities in

[6] And thus another probable explanation for negative reaction to dual-class recapitalizations is that the market anticipates a dilution from possibly imminent equity issues.

Section 6. Finally, Section 7 concludes.

2 Swiss regulatory background

To understand why the results of analyzing the Swiss sample of dual-class firms can be fairly different, it is instructive to analyze the regulatory background of the Swiss corporate milieu. In the early 90s, the total assets of all dual-class firms were twice as large as the total assets of all single share firms. If there would appear to be notably more incidences of any sort of abuse related to misrepresentation and misreporting in dual-class firms, a natural equilibrium outcome would be that the regulators and market community would call upon the introduction of more stringent regulation and transparent corporate practices. Local corporate standards indeed experienced far-reaching advancements in the direction of more transparent and demanding rules, so the contemporary Swiss requirements to listed companies are close to being as strict as the requirements in the U.S.[7]

Back in the beginning of the 90s, corporate executives and insiders could enjoy a fairly high level of freedom in accounting and reporting to shareholders and the market community. Before several important amendments were made to the Swiss Code of Obligations in the early 90s (accepted in 1992, mandatory for banks and financial companies from 1994 and for listed companies from 1996), there were the following weaknesses[8] in requirements to public corporations:

1. Swiss firms had an opportunity not to report their hidden cash reserves and could smooth their performance results over time or spend cash on discretionary projects of the managers, a practice that was shown to frequently harm the shareholder value.

[7]Swiss listed companies are obliged to comply with IFRS or U.S. GAAP – similar requirement as in the U.S. Yet, Swiss unlisted companies still enjoy fair amount of freedom, e.g., hidden reserves are still allowed and often used in case of unlisted companies, a practice which is prohibited in U.S. and international rules (according to the Swiss Institute of Comparative Law in Lausanne).

[8]See Peter Böckli, Schweizer Aktienrecht, 4. Aufl., Zürich 2009, §8 N 24-28.

2. Own shares didn't have to be reported, nor was it necessary to create a reserve for holdings of own shares.

3. The aggregation of financial statements of companies within a holding firm into consolidated accounts was not required; only the accounts of the controlling company were reported, so the real situation within a group could have stayed unknown to the shareholders and often even to the board.

4. Crosswise set-off and pre netting of foreign currency liabilities were allowed.

5. Notes to the annual accounts were not required, and they were not used in common practice.

These flaws in regulation indisputably gave corporate insiders broad freedoms to misrepresent performance and manipulate accounting data, potentially endangering the interests of outside shareholders. AluSuisse and Von Roll were examples of companies that were reporting sound finances while concealing actual losses using hidden reserves, which in the latter case brought the company to the brink of bankruptcy. Omni Holding was a noticeable example of fraudulent transactions and deception regarding its true business situation that triggered a major bankruptcy in 1991 and several billions of losses for debt-holders. The company abused the loophole on dealings with share repurchases and bought almost half of its own shares without disclosing it, thus creating a misleading appearance of sound stock performance despite deteriorating finances.[9] Given the weaknesses in regulation described above, the potential for abuse was presumably higher in firms with tight insider control, i.e. predominantly in firms with dual shares.

The lower initial transparency of Swiss corporations and the concentrated control resulting from dual-class structures were probably important triggers that provoked increased public attention and regulatory strictness on the Swiss market place. The dual structure has been heavily

[9]See Appendix for further details.

criticized since at least the 1930s; in 1936 the ban on the dual-class was the subject of the Swiss Parliament debate,[10] and then again in 1991 (yet, in both cases the Parliament decided to keep this option for Swiss firms). As possibly an economic substitute for a potential ban of dual-class shares, the debate on the necessity of increased corporate transparency intensified by the early 90s:[11] there were several votes in both parts of the Parliament regarding this issue, and while the majority supported increased transparency for public firms, there was a disagreement regarding the rules for non-listed firms.

The financial market regulation has experienced numerous improvements since then, most notably the enacting of the True and Fair View principle[12] and the introduction of more modern and stringent accounting rules in the Swiss Code of Obligations. The latter obliged firms to provide consolidated reports,[13] introduced notes to the annual accounts and rules on the disclosure of holdings of own shares and respective reserves, mandated reporting of clear offsetting links between the balance sheet and the profit and loss statement, and introduced the principle of first valuation by acquisition or production costs. Since 1996, the True and Fair View principle has effectively eliminated the practice of keeping hidden cash reserves on corporate books.[14] Importantly, previous studies showed that detrimental use of excess cash was one of

[10]See Robert Goldschmidt, Grundlagen des neuen Aktienrechts, St. Gallen 1937, p. 79.

[11]We identified in the "Amtliches Bulletin NR" at least six votes held on this issue by the upper chamber of the Swiss Parliament(Nationalrat) in 1985, and found similar examples of discussions held in the other part of the Swiss Parliament (Ständerat).

[12]In German "True and Fair View-Konzept". The listing rules demanded accounting according to the True and Fair View Principle starting from October 1996. See art. 8 para. 3 of the Swiss Stock Exchange Act (Bundesgesetz vom 24. März 1995 über die Börsen und den Effektenhandel, BEHG) and Peter Böckli, Schweizer Aktienrecht, 4. Aufl., Zürich 2009, §8 N 36.

[13]Art. 663e OR 1991.

[14]Further advances included the following: the reporting became focused on serving primarily external investors, not the interests of the management; the auditor has to approve complete compliance; economic, not legal reality has priority ("substance over form" norm); the achievement of a True and fair view must not be restricted or made impossible by political decisions. See Renè Cotting and Max Boemle, True and

the key characteristics of dual share companies (Masulis et al 2009), which was revealed as lower valuation of each dollar of cash held, as well as poorer returns to acquisitions and capital expenditures by companies with more disproportionate insider voting rights, i.e. in dual-class stock companies.

We can argue that while in the U.S. the investors had the choice to "walk away" from approximately 6% of firms that were dual class, in Switzerland such an argument would have been less appropriate when about half of the companies were dual-class, thus calling upon auxiliary regulatory norms and institutional efforts to reduce discretion of insiders and managers[15], rather than relying solely on market forces to foster corporate transparency. Arguably, such preemptive increase in regulatory stringency has fostered prudence in the market place and allowed Switzerland to avoid scandals similar to cases of Enron, WorldCom and Parmalat in the period following the reforms in financial regulation and accounting rules. Freedom to manipulate corporate reports and the ability to hide resources and losses were the key factors that made these corporate abuses possible. While in the beginning of the 1990s, Swiss corporations had such freedoms coupled with a high degree of concentrated control (amid the popularity of dual-class stock), the regulatory changes dramatically increased the accountability of top managers for the resources under their control, which made wide-scale misuse of shareholder value significantly less possible in Switzerland.

Fair View-Konzept versus Fair Presentation, in: Der Schweizer Treuhänder (2000), p. 790.

[15]Ethos foundation is a notable example of activist institutional player representing the rights of dispersed shareholder and pension fund beneficiaries in Switzerland.

3 The economics of dual-class and hypotheses development

In order to understand the value consequences of having the dual-class structure, in this section we analyze how the dual-class structure affects the incentives of corporate insiders. We have to notice that cash flow and control separation in many cases may not be the *aim* for introducing the dual share structure. Rather, many growing companies become too big for founders and other insiders to keep controlling equity stake. Seizing majority control is often an undesirable prospect for insiders in the light of possible takeover challenges, increased control by outside investors, and other factors that potentially may lead to a change in the business model or the management team against the will of current insiders. The dual-class structure[16] rather comes as an *instrument* allowing to raise outside capital without substantial loss of control. This allows the entrepreneurs to protect the business model of their firm, its philosophy[17] and control against possible takeover attempts and short-term disturbances.[18] Indeed, the dual-class appears as an effective protection device: CEO turnover was shown to be less sensitive to performance in dual-

[16] Along with other alternative mechanisms, although as Gompers, Ishii, and Metrick (2008) remark, "the other forms of anti-takeover protection – poison pills, staggered boards, golden parachutes – are no match for the power of dual-class stock."

[17] Google and Berkshire Hathaway are two stark examples of very successful companies that accessed public capital markets with dual-class structures. In both examples, founders introduced control-preserving mechanisms, yet many investors seem to appreciate the positive effect of concentrated control by founders – even in the presence of potential for insider benefits that such control typically entails. Contrary to the argument of disciplining effect of potential takeovers, many investors likely prefer protection that Google has from unsolicited takeovers by temporarily cash-rich rivals (e.g., Yahoo) that would be hypothetically possible following a period of Google's poor performance and temporary share price decline.

[18] As a growing body of literature signifies, far from all takeovers serve disciplining role over underperforming managers. In fact, empire building and overconfidence are often the true reasons behind an acquisition decision; see Malmandier and Tate (2005) and Burkart and Panunzi (2007) among others.

class firms, see Smart et al. (2007). As DeAngelo and DeAngelo (1985) argue, increasing the control of managers beyond their economic interests can reduce underinvestment by removing their fear of mistaken replacement by misinformed investors.

From this perspective, the dual share structure is not primarily introduced as a way to achieve disproportionately high control rights over the firm, but rather it appears as a firm- and founder-specific outcome of the complex decision regarding the access to the public capital markets and the degree of insider control maintained. Along these lines, the one share-one vote literature emphasized a number of important positive effects of having dual-class shares. The dual-class structure helps entrepreneurs to raise capital without substantial takeover threats, thus allowing commitment to long-term investments. This effect helps to mitigate the problem of short-termism in managerial decision making, whereby managers may focus on myopical goals to preclude potential takeovers (Chemmanur and Jiao, 2006). An overall takeover threat may induce insiders to waste resources on perpetuating their position instead of managing corporations effectively. The dual structure allows an entrepreneur to raise capital without substantial takeover threats, a fear which, according to Boot, Gopalan and Thakor (2006), can make an entrepreneur reluctant to access public capital markets in the first place. Indeed, Smart and Zutter (2003) show that dual structure is chosen by entrepreneurs who value control in their firms following IPO.[19]

Furthermore, as Burkart and Lee (2008) argue, reallocation of effective control from insiders (concentrated holdings of dual shares) to managers (dispersed shareholder ownership) can actually exacerbate the associated agency problems. In particular, executives' incentives can be even more disconnected from value creation than those of insiders, who still hold substantial cash flow rights (albeit in a lesser amount than control rights) and often have a psychological connection to the fortune of the controlled company. Furthermore, the dual structure helps to

[19]Yet, investors may undersupply capital economy-wide amid high expropriation opportunities created by dual-class structures (see Morck et al 2005) – the threat that is presumably stronger in countries with a poorer shareholder protection.

overcome low diversification of insiders' personal wealth: with lower capital share in the firm insiders have better diversified portfolios, and thus closer risk-taking incentives with an outsider shareholder, who is free to broadly diversify the firm-specific risk in her portfolio. Thus, the dual class can alleviate the incentive of undiversified managers to reduce firm-specific risk via diversifying acquisitions that do not create value (Morck et al, 1990).

The mentioned advantages of dual class structures come at a cost of a well-documented risk of expropriation by insiders who have control in excess of their cash flow rights. In order to understand the economic channel of a possible value loss effect in dual-class firms, we can refer to the papers analyzing the extraction of private benefits by insiders with superior voting rights. The literature on tunneling provides such evidence by describing the diversion of resources from corporations in various countries. For instance, Bertrand, Mehta, Mullainathan (2002) document a negative effect of disproportionate ownership[20] in India on firm performance due to tunneling. Cheung, Rau, and Stouraitis (2006) analyze similar expropriation practices in Hong Kong. These results show that if a controlling shareholder has disproportionate control rights that exceed cash flow rights, the deprivation of value is often assured in environments with weak legal systems.

Finally, we ought to address the fact that firms and corporate insiders choose whether to introduce and continue to have the dual-class structure depending on relative costs and benefits of doing so. It may be that the investors avoid allocating funds into dual-class firms, which would result in higher cost of capital compared to similar single-share companies. As discussed in the introduction, however, this can still result in reduced cost of capital relative to the option of making the firm private, and thus introducing the dual class can be an optimal choice. Additionally, fundamental differences between companies can lead to different propensity of choosing the dual-class structure, and if these differences also systematically affect the valuation, simple OLS regressions would deliver biased coefficients. The preexisting differences in fundamental

[20]Dual-class ownership was not allowed there until recently. Instead, pyramidal structures of indirect control were widespread.

characteristics could be an explanation why Taylor and Whittred (1998) found that dual-class IPOs in Australia had lower market to book values. In a similar vein, Villalonga and Amit (2006) find that a high Tobin's q reduces the likelihood of adopting dual-class shares. To mitigate this problem, we perform Heckman-type treatment effect estimation in Section 5.2.

We can formally split the positive and negative effects mentioned above into two economic channels. We let channel (A) aggregate the positive influence of concentrated control resulting from dual shares. We can list here the commitment to the success of the company (in many instances, the commitment of the founder or a related family, who may have strong reputational incentives), focus on long-term goals, more willingness of successful private firms to access public markets, and better alignment of corporate insiders as compared to managers with smaller equity stakes.

On the other hand, channel (B) includes the negative effects of scope for deprivation of value and inefficient management. Two main factors here are potential tunneling of resources at the expense of outside shareholders as in Bertrand, Mehta, and Mullainathan (2002) and Cheung, Rau, and Stouraitis (2006), poorer effectiveness of the market for corporate control and weaker takeover discipline over inefficient managers as in Bebchuk, Kraakman, and Triantis (2000).

The sign of the net effect of channels (A) and (B) determines in each firm whether a dual-class structure causes better or poorer performance and valuation as compared to the same firm if it had unified shares. For instance, the results of Gompers, Ishii, and Metrick (2008) and Masulis, Wang, and Xie (2009) suggest that in their sample the net effect of higher cash flow-control separation is negative. In our paper, we test whether the net effect is positive, negative or is absent (in which case channels (A) and (B) nearly offset each other) by estimating the influence of the dual share on the firm valuation, as well as on the efficiency of acquisitions. We formulate our hypotheses correspondingly.

Hypothesis1.A: *The dual structure has positive net effect on the market to book value, i.e. the effect of channel (A) dominates that of channel (B).*

Hypothesis1.B: *The dual-class structure negatively affects the market to book value.*

The second set of hypotheses considers the effect of the dual-class structure on firm acquisition activities.

Hypothesis2.A: *The dual-class structure positively affects the outcomes of acquisitions as measured by the abnormal return at announcement.*

Hypothesis2.B: *The dual-class structure has negative effect on acquisition outcomes.*

Presumably, we expect the variation in the magnitude of the net effect to differ across countries, depending on the quality of legal enforcement, the level of investor protection, the value of reputation and discount factors. For example, the two mentioned studies on tunneling practices analyzed Mainland China and India, two environments in which the level of investor protection and the value of reputation in repeated interactions are supposedly lower than in Switzerland, so we expect the net effect of dual shares to be on average higher (more positive or less negative) in countries like Switzerland than in those two markets.

As we discussed in Section 2, the level of investor protection in Switzerland has become comparable to that in North America, so we should not expect the effect of channel (B) to be less negative in Switzerland than in the U.S. On the other hand, the positive effect of channel (A) potentially could be stronger in the Swiss environment, and specifically so for firms that have chosen to have dual-class structure. Among firms that keep multiple share structures over the sample period are Lindt&Sprüngli (premium chocolate manufacturer), Swatch Group (manufacturing various luxury brands of watches and jewelry, the largest watch manufacturer in the world), banks Vontobel, Sarasin and Rothschild (three listed banks with reputable private banking businesses). We can reasonably expect that within this category of firms the value of long-term commitment and reputation may substantially overweight the expected loss from lower takeover discipline or potential expropriation. On the other hand, among the firms that unified the share structure there are much more high-tech oriented or machinery manufacturing companies, such as Von Roll, Logitech, Novartis, Cos Computers, Micronas, Schindler, Sulzer,

Schweiter Technology, etc. The choice of the dual-class structure among Swiss firms appears to be an important dimension of analysis and we treat this issue accordingly in the empirical part of this paper.

In section 5 we test the influence of dual shares on firm valuation, by estimating a least squares regression in part 5.1 and also by taking into account that the choice of the share structure is an endogenous decision in part 5.2. In section 6 we evaluate how the quality of acquisitions measured by announcement return differs among dual and single-class firms. Our results show that in the Swiss market the net effect of dual shares is positive for firm valuation, and it has positive impact on acquisition returns in the second part of our sample, as well as among firms with low and moderate market to book values in the entire sample.

4 Data description

For our regression analysis, we start with all firms (excluding cantonal banks) that were listed on the Swiss market between 1994 and 2000. We collected accounting and share price data for these firms over 1992-2008 from Datastream. To collect the data on the dual class variable[21]we employed the information on the equity structure of Swiss firms in the dissertations of Max Gerster (Stimmrechtsaktien, Diss., Zürich 1997) and Carole Lea Gehrer (Statutarische Abwehrmassnahmen gegen Übernahmen, Diss., Zürich 2003), as well as footnotes in Datastream and annual issues of the Swiss Stock Guide.[22] The issuance of multiple types of shares with a different number of votes per share is not permitted in Switzerland (except for non-voting participation certificates). The disproportionate voting power can be achieved via issuing two

[21]In fact, many firms used to have three classes of stocks before the 90s. Besides bearer and registered shares, participation certificates were often used (and continue to exist in some firms) as an extreme case of cash flow- and voting rights separation. We classify the firm as having dual class if it has more than one class of shares.

[22]The guide is published yearly by the leading Swiss financial newspaper "Finanz und Wirtschaft".

classes of shares with equal voting rights, but different notional values. Dual-class firms typically have bearer shares with higher nominal value and registered shares with lower nominal value, where the latter generally give voting control to founding families or other insiders in excess of their cash flow rights. The highest notional value may not be more than ten times than the lowest. Most dual-class firms in the sample chose the maximum difference,[23] which is consistent with the U.S. samples of dual-class firms in Gompers et al (2008) and Smart and Zutter (2003), who have 1:10 voting rights divergence as the most frequent structure.[24]

We hand-collected the dates of stock unifications for all dual-class companies from the initial list that no longer have a dual share structure. We identified the share structure for 145 firms listed at SWX[25] during the 1990s. After collecting firm-specific accounting variables we have a sample of below 2000 firm-year observations spanning the period from 1992 to 2008; from about 80 firms with complete available data in 1993 to about 140 firms in 2008. The availability of data for the firms in our sample is poor for 1992-1994, but it is improving significantly after 1995. We conventionally replace Research and Development expense to be zero if the value of this variable is missing in Datastream.[26] The proportion of dual-class firms in our sample gradually decreases from 56% in 1994 and 46% in 1996 to 28% in 2003 and stays at about 22% in 2005 through to 2008.

To improve inference and validate identification in Heckman-style treatment effect estimation, we collected the following four variables employed as predictors of dual-class structures in our tests. First, following Masulis et al (2009) and Gompers et al (2008), we codified whether a

[23]A notional difference of five times is another common, albeit less frequently observed alternative in our sample.

[24]Numerous firms used to have a limit on the maximum number of exercisable votes per shareholder or group of shareholders (most frequently at the level of five percent), as well as a ceiling on foreign ownership, although there was a general trend to abolish such restrictions in the 90s.

[25]The Swiss Stock Exchange; now "SIX" (following its restructuring in 2008).

[26]Schmid and Zimmermann (2009) describe that most Swiss firms in their sample with missing R&D data indeed run types of business that tend to have insignificant R&D expense.

firm's name contains a *person's name* (indicator variable that equals one if the company name contains any surname or family name). Second, the share of firms that concurrently have a dual-class structure (in a firm's broadly defined industry) is used as an exogenous predictor of having a dual structure. We also studied the history of each firm in our sample to collect the variable firm age, where we recorded the establishment year of the company described as the "core" enterprize, if there were mergers or acquisitions with name changes. Finally, we searched the news wires to document the departures of executives and other influential insiders[27] that we can classify as exogenously driven. We classified departures as exogenous, if those were quoted due to serious illness, demise and retirement age; other types of departures (for instance, executive turnovers) would very likely be related to past or expected performance and thus would not satisfy exclusion criterion.[28]

The requirements on instrument exclusion are not as strict for the Heckman-type estimation technique that we employ (as compared to the instrumental variable procedure), yet the exogeneity of dual class determinants is highly desirable in order not to rely solely on distributional assumptions needed for the Heckman estimation in the absence of exogenous predictors. For example, in line with Masulis et al (2009) and Gompers et al (2008), we argue that the variable *person name* should not have an impact on the efficiency of a firm, other than potentially influencing the decision of insiders (in this case, a family related to that name) to retain the control of the company via the dual-share structure. In other words, this variable is exogenous to firm value, besides its influence on the valuation channeled through the incidence of having the dual-class structure.

Similarly, the *firm age* variable is linked to the decision to keep the firm under tight control

[27] An insiders was classified as influential, if it was a manager or board member holding at least 20% of voting control (family shareholdings were also treated as being controlled by the insider).

[28] Another variable often used to instrument for dual-class structure, media dummy, was not employed in our study, as no company in our sample can be classified as belonging to media sector (using SIC codes as in Gompers et al).

using the dual-class structure, where the relation is hypothesized to be negative. As a firm becomes more mature, it also tends to have a weaker link with its initial founders simply due to the natural passage of time, as younger generations of owners will arguably have a lower psychological attachment to the firm their ancestors established or used to own. At the same time, we expect the age to have little influence on the firm value, once the industry effect, profitability and share of industry sales are taken into account. As the OLS estimation results further show, age has indeed insignificant influence on the firm valuation in a multivariate regression setting. Yet to avoid relying on variables that can be argued to have relation to firm's maturity and growth prospects (as age in Loderer and Wachli, 2009, or person's name in Bennedsen and Nielsen, 2008), we repeat our tests without variables person's name, age and departure of executive, in which case only the concurrent share of dual-class firms in the industry is used as an excluded instrument. We argue that the share of firms that choose to keep the dual structure should not be directly related to the valuation of a given firm, as it merely reflects how common or traditional the dual-class is in a given business environment.[29]

To address the second set of hypotheses on the efficiency of acquisition practices, we construct a sample of acquisitions announced by the firms in our sample in 1992-2008 in Switzerland as reported in the SDC database. We match acquisition data with accounting and stock price data from Datastream. There are only a few observations in 1992 and 1993, and the sample with completely available accounting data starts in 1994.

To test whether the announcement return differs for dual and single-class firms, we employ the raw cumulative abnormal return (CAR) around the date of the acquisition announcement as a dependent variable.[30] The abnormal return is customarily computed as a sum of stock

[29]The firm itself was excluded from calculating the share of other dual-class companies in a given firm's industry.

[30]We use a five day return window. Returns over periods of five days (rather than three) seem more appropriate amid overall lower turnover of Swiss stocks, as witnessed in numerous days with stale prices each year for most stocks in the sample.

returns in excess of the SMI index, in our case over five trading days, starting with the return two trading day prior to the announcement.

[Insert Table 1 Here]

We report the descriptive statistics in Table 1. Over the entire sample period, dual class firms are on average significantly smaller in size and industry share of sales, have somewhat smaller past sales growth (although the difference is insignificant), higher asset turnover and return on assets. The means of leverage (defined as long-term debt plus the current portion of long-term debt divided by assets) are similar, but single-class firms have notably higher long-term debt portion in their capital structure, which is explained by significantly higher short-term debt over assets ratio in dual-class firms. Industry-adjusted cash holdings and R&D expenditures are significantly lower at dual-class firms, while capital expenditure ratios and dividend payout do not differ significantly. These features hint at importance of industry and business structure for the choice of dual share structure: the dual structure is less frequently observed in higher R&D expense firms that also typically have higher market to book valuation. Single-class firms are on average five years younger and as expected have on average 10% less of closely held voting shares in their equity structure. Finally, abnormal returns at acquisitions are insignificantly higher for dual-class firms, which will be the focus of detailed analysis in section 6. We proceed with reporting the results of testing our hypotheses in the next two sections.

5 Estimating the impact of dual-class on firm valuation

We investigate the impact that the dual class structure has on a firm valuation, defined as market value of equity relative to its book value. We employ two versions of estimation: the baseline Ordinary Least Squares and the estimation that accounts for the sample-selection, the treatment

effect Heckman model. The former implicitly assumes that the dual class structure is randomly allocated to different firms in the sample. Such an assumption regarding an important choice variable is commonly not valid in any social sciences setting, neither is it sufficiently sound in our case of choosing ownership structure. Thus, the estimated coefficient has merely a descriptive interpretation of the association between firm value and the fact of having a dual structure. As the bias is likely present due to unobserved omitted variables, it cannot be interpreted as a causal relation or as an impact of introducing a dual structure in a given firm. Such a conclusion would disregard the inherited differences that make some types of firms more inclined to adopt a dual-class structure than others. Conversely, Heckman Treatment Effect estimation regression treats the choice of dual-class share as an endogenous choice variable, which is determined by firm-specific and industry-specific time-varying variables. In this case, the estimated coefficient of the dual-class dummy has a causal meaning: it quantifies the effect of having a dual-class structure on firm value.

5.1 Dual-class and valuation: OLS regression results

In the baseline regression, the dependent variable is market to book value of equity at the end of the accounting year. The explanatory variable of interest is the dummy of the dual-class. If the dual-class is abolished in a given year, we classify the firm as having unified shares in the respective year, as the anticipated effect of changes is likely to be incorporated into the year-end valuation. We employ the usual control variables to isolate the effect of firm-specific characteristics: leverage to capture the disciplining effect that periodic debt payments extend upon management, natural logarithm of assets to control for size, the share of industry sales to capture relative size on the market, earnings and assets turnover to capture efficiency, and age to control for maturity. The inclusion of these variables controls for the systematic differences in these dimensions and helps to estimate the straightforward OLS coefficient for the dual class dummy. However, we should note that it does not solve the problem of the sample selection into

dual vs. single-class, which is addressed in the next subsection.

[Insert Table 2 Here]

As presented in Table 2, the coefficient of the dual class dummy has a negative and significant estimate in the OLS regression indicating a negative correlation between a dual-class share structure and the firm value. As we discussed above, the coefficient from this regression should not be interpreted causally, and the underlying economic relation is yet to be estimated in a Heckman selection model. For now we conclude that firms that have dual-class also tend to be valued less.

Cash holdings relative to industry average have a positive relation with the valuation, which either demonstrates that stronger and more successful firms (with higher valuations) accumulate more cash from operations, or that the market perceives large cash holdings as a competitive advantage and a means to expand market share. The latter explanation is in line with Fresard (2009), who finds that cash reserves allow firms to gain market share and succeed in product market competition. However, this contrasts with a more traditional view that cash is used for discretionary purposes of management, rather than for shareholder value maximization.

Coefficients on other variables have an intuitive interpretation. Leverage has a positive but insignificant effect on equity value, which seems to reflect the net effect of the main consequences of having higher leverage: the positive influence of financial discipline imposed on corporate management and the negative influence of potential distress costs due to higher risk of a leveraged firm. This total effect may also incorporate the tendency that higher leverage is observed in more mature firms that have more assets in place (which helps to take higher debt level using assets as collateral) and at the same time fewer growth opportunities, and thus a lower market to book value.

Larger firms (more assets) tend to have a lower valuation per dollar of book value; while a firm's competitive position in its industry (percentage of industry sales) improves its valuation. Profitable and more efficient firms have higher valuation: lagged earnings and sales to assets

ratio are positively correlated with valuation. R&D expenditures are positively related to market to book value, reflecting that growth firms with higher research spending levels have a higher valuation.

5.2 Heckman Treatment Effect Estimation with correction for sample selection

As noted in the previous section, the sample selection problem makes the interpretation of the dual dummy coefficient problematic, as the estimate is likely to be biased. The Heckman treatment effect estimation adjusts for the selection problem in a two step procedure. In the first stage the probability of having a dual-class structure is determined in a probit regression, where a probability of having a dual-class structure is regressed on firm- and industry-specific characteristics. In order to improve the validity of the Heckman procedure, we need to have at least one valid instrument in the probit regression. The usual conditions in this case are that an instrument is sufficiently correlated with the dual class dummy and that it does not have a direct influence on the dependent variable of the second stage regression, the market to book value. As discussed above, the variables firm age, dummy for a person's name, share of dual-class firms in a broadly defined industry and exogenously driven departure are selected as instruments for this step.

The Inverse Mill's Ratio (IML) is obtained in the probit regression and then substituted into the second stage regression to correct for the sample selection. We employ two specifications of the first stage estimation, (i) with firm age, dummy of person's name and share of dual-class companies in a firm's industry, corresponding to columns (1) and (2) in Table 3; and specification (ii) where we additionally include the dummy of the period following an exogenously driven departure as an excluded instrument (columns (3) and (4) columns in Table 3).

[Insert Table 3 Here]

Column (2) of Table 3 presents the probit estimation of dual-class selection in specification

(i). We observe that the dual structure is more likely in younger firms (negative relation to firm age), if the firm has more dual firms in its industry (dual share variable) and if a firm's name contains a person's name (although the estimate is insignificant with p-value slightly above 10%). Also, the R&D expense level is negatively associated with the dual-class, indicating that growth firms with higher level of R&D expenses are generally less likely to have dual-class shares. The Wald test of independent equations rejects the no sample-selection hypothesis at all conventional significance levels.

As follows from the Heckman estimation in column (1), the selection is indeed present: the Heckman selection term, IML, is negative indicating that firms that happen to be dual-class also tend to be selected - ceteris paribus - from the pool of companies with lower valuation. A partial explanation for the negative coefficient of the selection term comes from the fact that R&D-intensive firms generally tend to have a higher equity valuation, and at the same time are less likely to have a dual structure (as follows from our probit estimation column). This result is consistent with Villanoga and Amit's (2006) findings that firms with higher Tobin's Q - i.e. firms with more growth opportunities and less fixed assets in place - have a smaller likelihood of adopting dual-class shares.

The main result in this regression and the novel finding of our paper is that the dual share dummy coefficient has a positive and significant impact on firm value, and in this specification it has a causal interpretation. Thus, in our sample the benefits of the dual structure outweigh the possible negative effects of concentrated ownership, once the selection is adjusted for. Summing up the results of this regression, the firms that are more likely to be in the dual-class group are ex ante inclined to be valued less, but having a dual-class structure improves their value. Other variables generally have similar signs to the OLS specification.

In specification (ii), the results stay qualitatively the same, as reported in columns (3) and (4). Here we add the PostDeparture dummy and a dummy of Departure.[31] Note that firms

[31]The departure dummy equals one for all firms that experienced an exogenously-driven departure of influential insiders during the whole sample period.

that experience a departure over the whole period, i.e. with the Departure dummy equal to one, are more likely to have dual shares. This is related to a higher incidence of detected departures in firms with higher concentrated control. On the other hand, such firms are fundamentally different from firms with no influential insiders, so the Departure variable does not satisfy the exclusion requirement and thus we have to include it also in the main regression. Interestingly, it has a strong negative effect on firm value, indicating that the pool of firms, from which we detected departures of influential insiders, are ex ante valued less, which is consistent with earlier findings on lower valuation of firms with highest levels of insider ownership concentration. This effect stays when the dual-class sample selection is accounting for using the IML variable.

The variables Dual Share in the industry and Post-Departure in column (4) are significant and have the expected signs, while Age and Person's name have the same signs as in specification (i), but are insignificant. The main result remains the same: the selection coefficient on the IML-correction variable is negative, but having a dual-class structure positively affects the valuation. This gives us ground to conclude that a simple OLS regression provides biased estimates of the dual-class influence on the firm value, and that the Heckman estimation provides corrected results regarding the influence of dual-class shares. Correction for the sample selection is necessary, as firms with different ownership structures are different in their fundamental characteristics.

The use of instruments often raises questions regarding the validity of the exclusion restrictions, and some evidence in the existing research may suggest that firm age and the presence of insiders might be correlated with growth prospects (Loderer and Wachli, 2009, and Morck et al 1988, respectively), and thus the exclusion criteria may not be satisfied. The use of person's name dummy as an excluded instrument has also been criticized as unobserved characteristics that make firms keep the founder's name may also be related to the maturity and profitability of the firm (Bennedsen and Nielsen, 2008). To address this issue, we repeat the tests of specifications (i) and (ii), where as a robustness check only the contemporaneous industry dual

share is used as an instrument in specifications (iii) and (v), or industry dual share and person name dummy in (iv) and (vi). These tests were performed with both market-to-book value of equity and market-to-book value of the firm as dependent variables. As reported in Table 4, the results stay in line with those reported in Table 3: the effect of dual-class dummy is positive and significant in all four specifications.

[Insert Table 4 Here]

Thus, the main result is that in Switzerland the dual-class structure provides more benefits than drawbacks to the efficiency of firms, which results in a positive net influence on the shareholder value. We suppose that in Switzerland it is a result of high degree of prudence and law-abidance that could in part be an equilibrium outcome in the economy with dominating dual-class structures and low transparency in the early 90s.

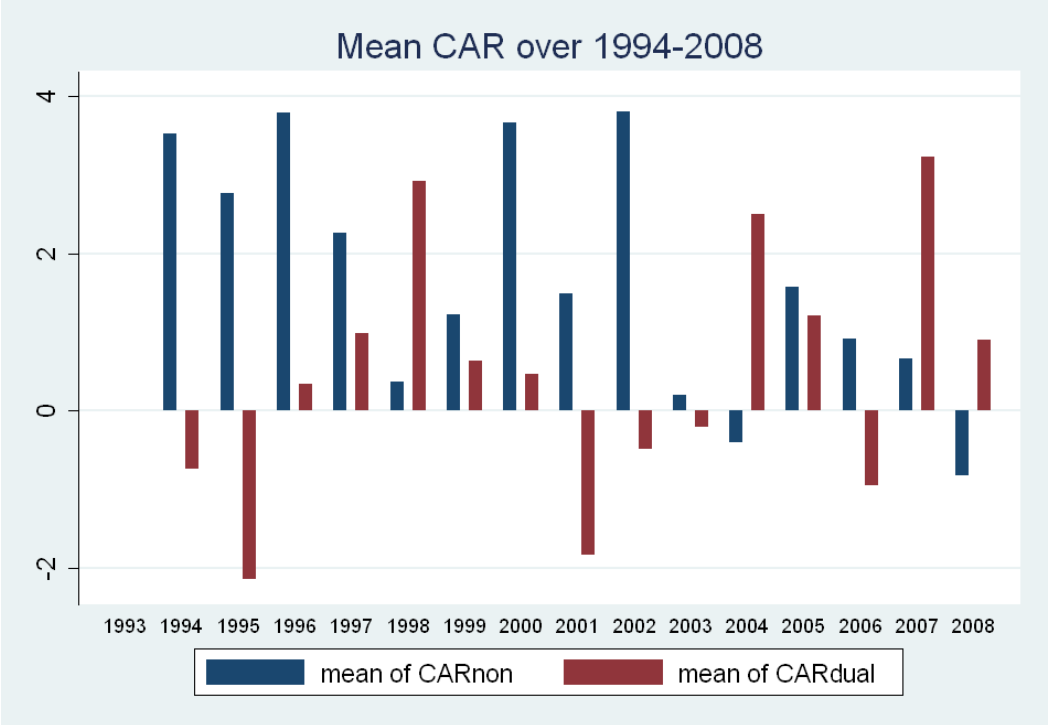
6 Efficiency of M&A transactions

In addition to the impact of the dual-class structure on a firm's valuation, we investigate whether growth via acquisitions has different patterns within subsamples of dual and single-class firms. The non-organic investment is an ideal setting to determine how the dual-class – and the associated effects of long-term commitment and potential value deprivation by insiders – influence the efficiency of corporate management. The stock market return around the acquisition announcement comes as a critical test of whether investors believe that firm executives and majority shareholders indeed pursue a value-maximizing strategy. According to the efficient market hypothesis, investors impute their evaluation of a proposed acquisition value into the share price. If there is in fact a substantial concern that private interests of insiders are a dominant factor for the decision to acquire, the market is more likely to express its dissatisfaction by pushing the stock price down. As Masulis et al (2009) argue, excess control rights may exacerbate the empire

building problem, and they show that as the divergence between voting and cash-flow rights in their sample increase, the acquisitions tend to be more detrimental for shareholder value.

We start with a univariate analysis of abnormal returns to yield the preliminary result regarding the difference in acquisition efficiency of firms in the two groups. We present the distribution of abnormal returns over the sample period of 1994 to 2008 in Figure 1. Each year, the first bar (in blue) represents the average cumulative abnormal returns (CAR) on acquisitions announced by firms with single share structure, and the second bar (in red) indicates the average CAR around acquisitions by dual-class firms. The distribution of returns varies a lot from year to year; the overall tendency before 2003 was that returns on acquisitions announced by dual share firms were inferior, while starting in 2004 CARs of dual-class firms were on average better compared to single share firms.

Figure 1. The distribution of average Cumulative Abnormal Returns among acquisitions performed by non-dual and dual share firms.



To assess the statistical significance of this trend, we split the sample period into five equally spaced periods. We calculate the average returns over each period for dual and single-class firms,

as well as the difference between the two groups, and report the results in Table 5. The intuition regarding Figure 1 is confirmed statistically: the difference between single and dual-class average returns is positive in the first period and negative in the last, both at a 10% significance level. The difference is insignificant in the three intermediate periods relating to acquisitions performed during 1997-2005.

[Insert Table 5 Here]

These preliminary results show that the findings on acquisition quality in Masulis et al (2009) on the U.S. sample do not extend to the whole Swiss sample: by comparing average returns, we see that only in 1994-1996 were the acquisitions of dual-class firms significantly worse, while starting in 2004 the acquisitions announced by dual-class firms were on average better than those announced by single-class firms. As compared to the market to book value results of the previous chapter, the acquisition return analysis does not suffer the problem of non-random choice into a dual versus single share category. Rather, the analysis of returns in the two groups manifests the view of the market on the quality of acquisitions, depending on the ownership structure and other firm- and acquisition-specific factors. Assuming the market provides a correct assessment of the value consequences for each acquisition,[32] the comparison of returns can demonstrate, which group of firms performs more efficient acquisitions (or less value-destructive ones – if we talk about the managerial overconfidence and empire building aspects behind acquisitions).

Before drawing conclusions regarding the M&A efficiency, we need to conduct multivariate tests to account for various firm-specific characteristics that were shown to be related to acquisition returns. Market to book value of equity proxies the value of marginal Q and captures the relative valuation of the firm. Overvaluation of stock may lead to managerial overconfidence resulting in sub-optimal acquisitions, so we additionally interact the market to book variable with the dual dummy variable. Also, overvaluation creates an incentive to optimally perform

[32]Or at least we require that a possible bias is not systematically different for dual and single class firms.

stock-financed acquisitions, which are more likely to have lower announcement returns. To address this issue, we exclude all-stock financed acquisitions as a robustness check. Further, we include leverage to control for disciplining effect of debt in the capital structure, natural logarithm of assets to control for size, earnings and assets turnover to capture efficiency, and age. All accounting variables are as of the end of the year preceding the acquisition announcement. The results of CAR regressions are reported in Table 6. To address the change in the tendency that we observed in a univariate setting, we interact in regression (1) the dual dummy with the post-2000 dummy. Echoing our preliminary results, model (1) shows that in the first half of our sample the influence of dual-class on acquisitions is negative, although insignificant (the estimate has a p-value of about 15%); while in the second part, it is positive at a 10% significance level.

[Insert Table 6 Here]

In model (2) the coefficients of interest are the dual class dummy and its interaction with the valuation measure MB (Dual_MB). As expected, a higher corporate valuation is associated with lower expected returns to acquisitions, which is consistent with the overconfidence hypothesis as in Malmendier and Tate (2005). Interestingly, this negative effect of overvaluation appears only in the dual-class subsample (the negative interaction term), which shows that in firms with high valuations, dual share results in lower announcement returns. Thus, high valuation by the market and concentration of voting power jointly exacerbate the problem of suboptimal investments by overconfident managers. On the other hand, we observe a strong positive influence of the dual class on returns to acquisitions announced by firms with low valuations, where the effect of long term commitment to the firm likely dominates. To assess the magnitude of the effect, we take the firm with an average market to book value (2.3): for such a firm the influence of the dual class is positive ($8.22 - 2.99 * 2.3 = +1.32$). For a firm with below-average valuations, the influence of dual-class is higher, while for firms with a market to book value substantially above average (in the sample we have standard deviation of the market to book variable equal 1.90) the effect of dual-class is negative.

The latter result has interesting cross-sectional implications: it is not the overvaluation or concentrated control alone that leads to inferior acquisition decisions, but rather the combination of both. Higher valuation may create managerial overconfidence along the lines of Malmandier and Tate (2005), while dual-class can help executives to avoid common control mechanisms and to relinquish their ambitions to acquire excessively. The alternative interpretation here would be that managers optimally acquire when the stock is overvalued, and the negative return results from the signaling effect. However, this alternative has limited validity as the results on the sample without 100% stock-financed acquisitions (unreported for sake of brevity) are not qualitatively different. Thus, our results stand in contrast to findings in Masulis et al (2009), who find strong and significant negative effect of the dual structure on acquisition outcomes, but generally are in line with findings in Bauguess and Stegemoller (2008), who show that shareholder limiting provisions do not distort, but rather improve acquisition outcomes (both for bidder's and target's shareholders).

As for the control variables, a high level of debt seems to improve the return to acquisitions due to bondholder monitoring, which helps to prevent managers from making value-destroying acquisitions: the coefficient on Leverage is positive in both regressions, although it is significant at 10% level only in model (1). Asset turnover measured by the *Sales over assets* variable has a positive influence on acquisition returns, although insignificant in both regressions, indicating that acquisitions by firms that utilize assets more effectively are somewhat better appreciated.

In these acquisition return regressions, we observe an isolated outcome of a managerial decision to acquire another firm or business; so as we find that market reaction is more positive in one group of firms, it indicates that the interests of shareholders are better pursued in this type of firms. While we observe the resulting net influence of the dual-class structure on acquisition returns, and not the structural mechanism that makes acquisitions by dual-class firms better (in the second half of our sample period or within companies with low and moderate valuations), we can only hypothesize as to why dual-class may improve the acquisition outcomes. As mentioned

in section 3 of this paper, the dual-class shares help to preclude unsolicited takeovers and while the competitive pressure on firm executives weakens, so does the fear that the firm would be acquired, particularly, following a temporary decline in the market value of a firm.

By way of example, we can refer to the announcement of a bid for the German financial advisory firm AWD by Swiss Life in 2007, when fears that Swiss Life could itself become acquired was speculated to be one of the main rationales for the acquisition. In that case the acquirer had substantial cash on the balance from selling Banca Del Gottardo[33] and other assets following a restructuring program. This pile of liquidity in corporate accounts could attract aggressive bidders, while paying such an amount as a special dividend could involve tax complications for shareholders, so acquiring the advisory firm helped to strategically dispose of excess cash reserves. Arguably, with the dual-class structure such motivation would not be relevant and a potential acquisition would be evaluated on a stand-alone basis and not in the context of the urgent need to spend cash. The announcement of the bid for AWD was met with an about 5% decline in Swiss Life stock in a relatively flat market,[34] although cash-financed acquisitions are usually characterized with relatively better announcement returns than stock-based ones.

This example, while spotting only one of numerous aspects of the decision to acquire, has its own merit in that it shows how the dual structure can improve the acquisition outcomes by shifting focus of the executives on the long-term interests, and help to avoid managerial myopia in line with Chemmanur and Jiao (2006). And if the scope for the deprivation of value by insiders is limited due to a high quality legal environment, as is the case in Switzerland, the net effect of the dual-class on acquisition returns can substantially improve. Thus, the results of

[33]The total consideration was about CHF1.85 billion. See NZZ on 04.12.2007 ("Kaufofferte der Swiss Life für den Finanzberater AWD") and on 29.08.2008 ("Die Swiss Life verfehlt Ertragsziele deutlich").

[34] Subsequently, there were numerous negative comments regarding the success of this transaction. E.g., NZZ on 16.12.2009 wrote that everyone, even Swiss Life itself, agreed that price paid for AWD was unjustifiably high, and that part of Swiss Life team was against the acquisition ("AWD ist reif für eine negative Überraschung"). Along the same lines, on 12.01.2010 NZZ article commented that AWD purchase was a burdensome commitment ("Allianz soll auf die Swiss Life schielen").

this section corroborate our findings on positive effect of the dual-class on firm value and show that long-term focus of firms with dual shares positively affects acquisition outcomes.

7 Conclusions

This article contributes to the extensive literature on dual-class shares and on the extraction of private benefits by corporate insiders. While the literature on the dual-class structures underscores the dark sides of insider control, there exists also abundant literature that suggests that introducing the dual class may be a value-improving decision for firms. For example, as Chemmanur and Jiao (2006) argue, dual-class recapitalizations create incentives for entrepreneurs to finance long-term investments, while according to Boot, Gopalan and Thakor (2006) absent the dual-class option, some firms could forgo the overall opportunity of accessing the capital markets. We argue that the net effect of the long-term commitment and potential for deprivation of value that dual-class can cultivate depends significantly on the level of corporate transparency and accountability, as well as on the value of reputation and repeated interactions between corporate insiders and outside investors.

By applying the sample selection techniques to our sample of Swiss firms with suitable instruments, we find that the dual-class shares, in contrast to earlier findings, improve the valuation of firms, although the sample selection leads to a lower ex-ante valuation among firms that choose to deviate from the one share-one vote rule. Thus, our results on valuation do not coincide with findings from the U.S. and other samples.

The comparison of acquisition outcomes between dual and single-class firms shows that, unlike previously found for North American data, the acquisitions by dual-class firms are generally perceived not worse than those by single-class firms, and, in fact, have higher announcement returns post-2000. Thus, our findings go in line with findings in Bauguess and Stegemoller (2008) and Bauguess et al (2007). We show that the dual structure has positive effect when

combined with low or moderate valuation of equity, while among overvalued firms the effect of tight control in dual-class firms is negative. The latter result contributes to the literature on acquisitions by overconfident managers by showing that the combination of insider control and high valuation create scope for destruction of value in acquisitions.

Our results allow us to conclude that policy recommendations suggesting to ban the option of issuing multiple share classes may yield inefficient consequences in environments with high levels of investor protection. We can further suggest that in countries with lower level of investor protection the policy aimed to improve corporate transparency and accountability may come as an appropriate substitute for eliminating the option of issuing dual-class shares.

8 Appendix. Swiss Corporate fraud case

Perhaps the most relevant case in Swiss corporate practice was the bankruptcy of *Omni Holding*. Werner Kurt Rey made his name in 1976, when he acquired the majority of the venerable but loss-making Bally Shoe company and sold his stake soon later with a profit of around 30 million Swiss francs. After the "Bally-Coup" Rey established his company Omni-Holding as a financial empire. Subsequently, his investor and venture capitalist career progressed from that of an initiator of hostile take-overs to the role of a billionaire white knight in various international M&A deals ranging from real estate to engineering works, electronics, media and financial services, in which he himself served occasionally as a guarantor to institutional lenders. But in 1991, his financial empire crashed and Rey left debts of 2-3 billion Swiss francs. When accused of fraud, falsification of documents and fraudulent bankruptcy, Rey flew to the Bahamas, where he was arrested and then extradited to Switzerland. Rey was only sentenced for attempt of fraud at the expense of the Cantonal Bank of Bern and for fraudulent bankruptcy, as he decreased his private fortune to the detriment of the creditors. Further proceedings were time-barred in 2007.[35]

[35] See http://de.wikipedia.org/wiki/Werner_K._Rey; last visit on September, 22 2009.

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Table 1: Comparative statistics of single and dual-class companies. Mean of each subsample and difference between two means are reported. Asset turnover is defined as ratio of sales to total assets.

Accounting and Performance	Comparison of means		
	Single Share	Dual Share	Difference
Total Assets, CHF mil.	20'301	5'558	14'743***
Industry sales share, %	0.19	0.06	0.12***
Sales growth, last 3 yrs	9.3	7.2	2.1
Asset turnover, %	87	96	-9***
ROA, 5 yr average, %	4.12	4.76	-0.55*
ROE, 5 yr average, %	8.9	8.6	0.3
Leverage as % of debt in TA	24.0	23.6	0.4
Long-term debt as % of TA	31.3	27.1	4.2***
Cash holdings, industry adj.	2.81	2.58	0.23***
CapEx, % of assets	18.9	11.1	7.8
R&D normalized to Sales, %	1.56	1.05	0.51***
Dividend Payout ratio, %	33.6	33.3	0.3
Age	78.9	73.7	5.2**
Closely held shares, %	40.3	50.1	-9.8***
CAR, 5 day window, %	0.37	0.67	0.31

Statistical significance from mean difference t-test is indicated as: * for at least 10% significance level, ** for 5% and *** for 1% or better.

Table 2: The Effect of Dual Class on Firm Valuation, OLS Estimation Results. Dependent variable: natural logarithm of one plus market to book value of equity. Earnings (one year lagged) and R&D expenditures are scaled by total assets. Leverage is defined as ratio of long-term debt and the current potion of long-term debt over total capital. Cash is cash and equivalents normalized by average cash in the firm's industry.

Dependent Variable:	Market-to-book value
Dual Class	-0.197**
	-2.11
Cash relative to ind. av.	0.133***
	3.34
Assets	-0.11**
	-2.35
Earnings	0.72*
	1.97
R&D	0.16***
	2.83
Sales over Assets	0.15**
	2.32
Sales share in firm's ind.	0.29***
	2.83
Leverage	0.146
	0.52
Firm age	-0.0009
	-0.98

Significance is stated as: * for at least 10% significance level, ** for 5% and *** for 1% or better. Standard errors adjusted to clustering at firm level, corresponding t-values reported in *italic*. Constant term, year and industry dummy coefficients are suppressed for brevity.

Table 3: Dual Class and Firm Valuation: Heckman Treatment Effect Estimation. Dependent variables: natural logarithm of one plus market to book value of equity; in the first stage Probit: the dummy of having dual class shares. Earnings (one year lagged) and R&D are scaled to total assets. Leverage is defined as ratio of long-term debt and the current potion of long-term debt over total capital. Cash is cash and equivalents normalized by average cash in the firm's industry. Dual share-industry represents share of dual firms in the industry (calculation excludes a given firm itself). PostDeparture dummy equals one for each period following an exogenously driven departure of an influential outsider. Departure dummy is one if a firm experiences a departure over the sample period.

	Treatment Effect (i)		Treatment Effect (ii)	
Variables	(1)TE	(2)Probit	(3)TE	(4)Probit
Dual Class	0.72***		0.55**	
	3.48		*2.09*	
Cash, ind. adj.	0.12***		0.13***	
	3.15		*3.19*	
Assets, log	-0.087*		-0.091*	
	-1.81		*-1.92*	
Earnings	0.83**		0.80**	
	2.05		*2.03*	
Sales share, industry	0.26**		0.29***	
	2.48		*2.72*	
R&D	0.29***	-0.36***	0.28***	-0.73***
	3.67	*-3.58*	*3.79*	*-2.96*
Sales over Assets	0.17**	-0.73	0.17**	-0.79
	2.26	*-0.61*	*2.13*	*-0.61*
Leverage	0.149	-0.73	0.167	-0.90
	0.58	*-1.40*	*0.65*	*-1.52*
Dual Share, ind.		0.019**		0.015*
		2.33		*2.18*
Person name		0.31		0.32
		1.60		*1.48*
Firm age		-0.035**		-0.004*
		-2.06		*-1.95*
PostDeparture				-0.89***
				-3.57
Departure			-0.60***	2.09***
			-3.25	*8.41*
Heckman λ (IML)	-0.553***		-0.609***	
	σ_λ=0.11		σ_λ=0.11	
Wald test of ind. eq.	χ^2=8.33		χ^2 =12.00	
	pval=0.004		pval=0.001	
Firm-year obs.	1715		1629	

Table 4: Dual Class and Firm Valuation: Alternative specifications of Heckman Treatment Effect Estimation. Dependent variables: natural logarithm of one plus market to book value of equity (q) and of total firm value (mb). Earnings (one year lagged) and R&D are scaled to total assets. Leverage is defined as ratio of long-term debt and the current potion of long-term debt over total capital. Cash is cash and equivalents normalized by average cash in the firm's industry. Dual share industry represents share of dual firms in the industry (calculation excludes a given firm itself). PostDeparture dummy equals one for each period following an exogenously driven departure of an influential outsider.

	M-to-B value of Equity		M-to-B value of Firm	
Variables	TE (iii)	TE (iv)	TE (v)	TE (vi)
Dual Class	0.77***	0.78***	0.37***	0.35**
	3.45	*3.39*	*7.43*	*7.26*
Cash, ind. adj.	0.16***	0.16***	0.073***	0.072***
	3.30	*3.28*	*3.47*	*3.49*
Assets, log	-0.11**	-0.10**	-0.064***	-0.063*
	-2.04	*-1.98*	*-2.89*	*-2.94*
Earnings	0.03*	0.30*	0.019*	0.021**
	1.69	*1.68*	*1.95*	*2.17*
Sales share, industry	0.14	0.13	0.017	0.018
	1.14	*1.04*	*0.35*	*0.36*
R&D	0.05***	0.05***	0.023***	0.022***
	3.23	*-3.24*	*3.17*	*3.01*
Sales over Assets	0.23**	0.24**	0.019	0.019
	2.46	*2.49*	*0.50*	*0.49*
Leverage	0.49	0.49	0.24*	0.277
	1.41	*1.39*	*1.77*	*2.24*
Excluded instruments:				
Dual Share, ind.	X	X	X	X
Person name	-	X	-	X
Firm age	-	-	-	-
PostDeparture	-	-	-	-
Heckman λ (IML)	-0.564***	-0.564***	-0.28***	-0.272***
Wald test of ind. eq.	χ^2=18.2	χ^2 =16.75	χ^2 =56.6	χ^2 =54.9
	pval=0.000	pval=0.000	pval=0.000	pval=0.000
Firm-year obs.	1715	1715	1671	1654

Significance is stated as: * for at least 10% significance level, ** for 5% and *** for 1% or better. Standard errors adjusted to clustering at firm level, corresponding t-values reported in *italic*. Constant term, year and industry dummy coefficients are suppressed for brevity.

Table 5: Dual-Class and Acquisitions: Univariate Comparison of acquisition returns between non-dual and dual firms. Five day cumulative abnormal return around acquisition announcement. CAR computed as actual abnormal return with SMI index used as the benchmark.

Periods:	1994-96	1997-99	2000-02	2003-05	2006-08
(1) CAR non-d	2.93	2.90	1.99	0.59	-0.14
(2) CAR dual	-0.06	0.89	-0.69	0.27	1.83
# obs	16/23	50/38	80/32	83/30	61/25
$\triangle$=(1)-(2)	2.99%*	2.00%	2.68%	0.32%	-1.97%*

* denotes 10% significance level.

Table 6: Dual Class and Acquisition CAR: Regression Analysis. Dependent variable is five day cumulative abnormal return around acquisition announcement with SMI index as the benchmark. Post2000 is dummy variable equal to one for acquisitions performed in year 2000 and afterwards. Market-to-book denotes market valuation per dollar of book equity. Two interaction variables denote interaction of the Dual dummy with Post2000 dummy (inter_Dual_Post) and the Dual dummy with Market-to-book value (inter_Dual_MB). Earnings (one year lagged) and R&D expenditures are scaled by total assets. Leverage is defined as ratio of long-term debt and the current potion of long-term debt over total capital. Cash is cash and equivalents normalized by average cash of the firm's industry.

Variables	(1)	(2)
Dual Class	-2.55	8.22**
	-1.48	*2.35*
Post2000	-2.93	
	-1.29	
inter_Dual_Post	3.37*	
	1.67	
Market-to-Book	-2.05	1.24
	-1.47	*1.64*
inter_Dual_MB		-2.99**
		-2.65
Cash, ind. adj.	-0.102	0.04
	-0.69	*0.43*
Leverage	6.54*	8.90
	1.75	*1.57*
Assets, log	0.15	0.21
	0.34	*0.54*
Earnings	-1.85	-2.14
	-1.17	*-0.17*
Sales over Assets	0.57	0.56
	1.47	*1.33*
Firm age	-0.014	-0.01
	-0.88	*-0.45*
# Acquisitions	253	253

Significance is stated as: * for at least 10% significance level, ** for 5% and *** for 1% or better. Standard errors adjusted to clustering at firm level, corresponding t-values reported in *italic*. Constant term, year and industry dummy coefficients are suppressed for brevity.

Empire Building in Firms Going Public: How Early Do We Discover the Problem?

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Abstract

I investigate the ability of IPO process participants to perceive the information regarding the empire building problem within firms going public. The results confirm that the market participants are able to detect empire building already at the pre-IPO stage. I find that the extent of the respective price adjustment depends crucially on the underwriting bank's reputation: less reputable banks have stricter policy with respect to empire building. Reputable banks, which are more likely to be banking service providers beyond underwriting, do not seem to apply overly strict policies to potential empire builders.

JEL Codes: G32, G34

Key words: Dual-class shares, Insider Ownership, Firm Value, Acquisitions.

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1 Introduction

In this paper, we conduct an empirical investigation on the efficiency of the market in detecting Empire Building managers of firms that go public, starting from the time a firm announces its decision to go public and until acquisitions by the firm management take place within a three year horizon. Over this time span, important periods of information sharing between the firm and market participants are evaluation of possible offer price range by the underwriter, bookbuilding process, first day of trading, and further trading at a stock exchange.

The key research question of this paper is to determine during what period(s) the market is able to recognize possible problems with firm management, and to detect empire building and associated free cash flow problem. In other words, conducted econometric tests aimed at determining whether at IPO the firm's share price absorbs negative news about the empire building within the corporate management.

For the variable capturing empire building as opposed to value creation, we used the abnormal returns on dates of corporate acquisition announcements. We relate this measure of empire building to such variables as adjustment from initial indicative price range to the offer price, return on the public offering day, one year (abnormal) stock return, controlling for underwriter reputation and usual firm-specific characteristics. We expect to see regularities between abnormal returns on acquisitions days and particular stages of price adjustment. For instance, the strong form of market efficiency hypothesis predicts that the information regarding the problems with the firm management should be reflected in the stock price at the very early stage, i.e. in our setting the price settled during the bookbuilding process should be informative of the free cash flow problem. That is, the effect of empire building on company valuation is presumably stronger at earlier stages of stock price determination (such steps of IPO process as establishing initial price range and bookbuilding) in the case of high market efficiency. Conversely, if the stock price starts to incorporate the information about empire-building problems within firm management only in the long run, when value-destructive acquisitions actually take place, this

would suggest of a lower level of market efficiency.

The results demonstrate that the information on future empire-building problems is reflected in the stock price as early as during the process of setting the initial price range, and during bookbuilding process. Thus, the results in this paper advocate high efficiency of corporate valuation during the process of going public.

2 Setup

This paper contributes to the large volume of literature that analyzes reasons for the phenomenon of underpricing in IPO and the role of underwriting bank's reputation. The novelty of this work is to verify whether at the IPO stage, the price setting process incorporates information about potential empire building problem. In this section, we discuss possible effects of the Empire Building on the process of going public in the light of existing theories of underpricing. We also posit testable implications in the form of three hypotheses.

In one of the most established theories of underpricing in IPO, first day abnormal return was attributed to the information disadvantage of small market players who should be compensated with high overall underpricing to break through when participating in IPO (as Winner's curse in Rock, 1986). In our context, higher information asymmetry for small players particularly refers to the empire building problem, among other risk factors associated with expected stock performance.

Benveniste and Spindt (1989) model argues that major market players with information superiority should be rewarded by underpricing for truthful information revelation during the bookbuilding process. Along this vein, an important source of information regarding the free cash flow problem are evaluations of bookbuilding participants, typically investment divisions of large institutional investors. In our setting, if these investors have valuable information regarding the empire building characteristics of the management of a company going public, once this information is truthfully revealed, the underwriter can set the offer price based on it.

Again, such information can be rewarded with higher underpricing.

The willingness of the underwriter to disclose such information depends on his motives, and this interlinks with the line of research that viewed underpricing as an outcome of a principal-agent conflict between an issuer and an underwriter. In Baron (1982) and Loughran and Ritter (2002), an investment bank as an issuer's agent can abuse market power and information superiority in order to extract additional rents from the issuer. That is, the underwriter and its network of valuable clients directly or indirectly benefit from underpricing, receiving a lion's share of the amount 'left on the table' during IPO. For an extreme example of the 'money left on the table' in IPO, we can refer to *UPS*, who 'abandoned' in IPO $ 1,597 mln (exclusive of international tranche) on November 10, 1999. In the setting of the current paper, besides possible conflicts between underwriters and issuers, the principal-agent conflict arises between empire-building managers and company's current and future shareholders. From this point of view, such a manager tolerates underwriter's unfair pricing simply because this CEO is not willing to maximize shareholders' value. On the other hand, and this is the innovation of the current work, the empire builder has interests that diverge from value-maximizing behavior and from interests of shareholders, which will affect both the way the CEO bargains over the offer price and the market valuation of the shares due to information revelation and market efficiency. Hence, underpricing is affected because both the offer price will be influenced by the measures of empire building ambitions, and also the bookbuilding and first day price change will be influenced as well, because the market and underwriter can possibly detect manager's adverse incentives.

Value maximizing managers, as well as empire building managers may use various signals to signal their motives to the market. The signaling interpretation of underpricing is due to Welch (1989): high quality firms underprice because they can sustain the losses over longer period and break even at a later stage, for instance, via better placement of seasoned offerings. At the same time, low quality firms have little incentives to mimic this behavior as underpricing

would be a threat to their sustainability and survival. Whence, underpricing as a signal of high firm quality. In the current setting, good quality firms (with value-maximizing managers) and bad quality firms (empire builders) can promote different levels of the offer price in order to signal to the market (or to the underwriter) of their quality. On the other hand, the market and the underwriter can detect the free cash flow problem with some precision. Thus, the Empire Building problem can affect both the bookbuilding change and the level of underpricing.

As long as the underwriter's reputation is at stake, the conflict arises also regarding information sharing between CEO and underwriter: empire building managers mislead the underwriter concerning their expansion plans, creating additional risk for the investment bank certification quality. This problem overlaps with the line of literature explaining underpricing as a tool that underwriters use to reduce legal responsibility in cases of unsatisfactory performance of stocks that they certify and lead to public trading. In our setting, empire building is an additional source of uncertainty that the investment bank is supposed to reduce, and whenever the asymmetry related to empire building remains, the underwriter may set the company valuation at a lower level, in order to decrease the risk of potential litigations.

Following these arguments, we set the first two hypotheses:

H.1 The Empire Building problem amplifies informational asymmetry, hence, the bookbuilding adjustments (in absolute value) and the level of underpricing increase.

H.2 Bookbuilding change and underpricing incorporate the Empire Building problem, whilst later price adjustments bring less additional information (given high efficiency of the bookbuilding process).

Another strand of the literature emphasizes the link between underwriter quality and the outcome of an IPO. Particularly, the interdependence between underwriter prestige and the first day return has been studied extensively. For the period of 1980s, the dominating view was that better qualification of an underwriter reduced the uncertainty related to a new stock becoming public. The rationale was that a higher prestige underwriter provided more professional services

and had valuable reputation to sustain, hence, the risk premium for a new company should have been smaller. In the 1990's, the sign of this causality has flipped, which caused new interpretations to appear. Particularly, findings in Biais, Bossaerts and Rochet (2002), Ljungqvist (2003) and Nimalendran, Ritter and Zhang (2006) suggest that larger banks, having accumulated high reputation capital, can abuse their market power creating benefits to their network of clients by keeping the offer price below the fundamental value. A different explanation of this phenomenon related to the endogeneity of underwriter choice was shown in Habib and Ljungqvist (2001). They found that those were, in fact, firms with the highest expected underpricing per se, who hired the most prestigious underwriters, thus decreasing their losses from underpricing. Hence, for such firms the observed underpricing is smaller than in the case if these same firms went public with lower prestige underwriters, but yet higher on average then the underpricing experienced by other firms (more mature firms with lower asymmetry of information, etc.). In the current paper, the emphasis is on the influence of the underwriter quality on the amount of information concerning empire building revealed at different stages of IPO.

Obviously, higher prestige underwriters have better professional qualification allowing them to detect the empire-building problems within firm management, and more market power to freely make such information public. At the same time, it is not straightforward to predict how the motives of big and small investment banks differ concerning their willingness to disclose evaluations of empire builders. The legal factor discussed above is likely to be also important here: both reputable and smaller types of banks are reluctant to have any litigations from the buyers of the stock they led public. Prestigious underwriters have bigger reputation capital and financial liability that can be challenged by dissatisfied market players, whilst for less reputable investment banks with smaller capital, even a moderate fine related to low performing issues would be a serious burden. Finally, bigger banks have huge reputation capital to maintain, but, on the other hand, a higher temptation to 'cash-in' some of it whenever a hot deal is coming (e.g., to distribute a 'hot stock' to their most valuable clients in exchange for higher brokerage

commissions and other deals). As for the smaller banks, although these do not have a big reputation to safeguard, they need to accumulate it over long horizon in order to enlarge the market share, and this can be a stringent motive in their evaluation policy.

An interesting finding related to the reputation as a discipline devise in the setting of venture capitalist is due to Baker and Gompers (2003). In their sample, the start-ups promoted by more reputable venture capitalists on average have more independent boards of directors, and higher probability of CEO replacement. This suggests that venture capitalists with bigger market power possess better control over firm management, and have more freedom to dismiss those CEOs who do not perform satisfactory. This, in turn, positively affects the reputation of bigger venture capitalists. Incentive mechanism of investment banks appears to be more convoluted than in the case of VCs. On the one hand, the similarity is that more reputable banks have solid market power, whence they can take strict policy regarding evaluating issuers' management and allowing them to complete the IPO. Furthermore, they possess a wide client base, and the marginal effect of losing any single issuer as a client due to overly strict policy regarding empire building problems, is small.

On the other hand, reputable banks, besides underwriting, also provide wider range of other services, hence, a scrutinizing certification policy at IPO can trigger an issuer to choose another bank for post-IPO services rather than to do business with various divisions of the underwriter (SEO and debt issues, brokerage and hedging services, etc.). In other words, the relationship between the issuer and underwriter is in the form of repeated interactions, and the internal conflict can be very substantial in case of larger banks. Hence, it is not straightforward that the findings for VCs (as in Baker and Gompers) also apply for the investment banking. We find that the underwriter prestige plays a very important role in the way investment banks incorporate empire building problem into the stock price, and these are, in fact, smaller banks that have a more conservative policy regarding evaluation of empire building problem.

Thus, the third hypothesis incorporates the influence of the underwriting bank's reputation:

H.3 An underwriter's quality affects the magnitude of relationship between empire building and IPO price adjustments.

From the above discussion follow the differences of this paper from the existing literature on underpricing. Unlike in the theories on principal-agent conflict in underwriting, in this paper, cross-firm differences in underpricing come not due to the conflict with an outside agent (investment bank), but rather from the extent of internal corporate governance imperfections (management's interests diverge from value maximizing). In contrast with the signalling literature, in the current work the market information efficiency is crucial for the level of underpricing. It is not that underpricing comes solely from the choice of the offer price, but rather the outcome of bookbuilding process and market's evaluation of the company's quality that arises during the first trading day are important determinants of underpricing. Finally, the paper aims to contribute to such explanations of underpricing as adverse selection, Benveniste and Spindt's information sharing, legal reasons and underwriter quality, by investigating whether the empire building is an additional factor that is evaluated during the bookbuilding and accounted for in the stock price.

2.1 Information revelation

We argue that due to the market efficiency, the information regarding the empire building problem is detected early in the process of going public. For estimation purposes, we assume that the information about the firm quality and, particularly, potential empire building problem, can be revealed to the marker during the following periods.

1. A firm intended to go public negotiates with a potential underwriter conditions of IPO, the underwriter evaluates the company and sets an indicative price range for the stocks (captured as the midpoint of the initial price range).

2. The underwriter performs bookbuilding, advertising the stock to potential clients and gathering information regarding the firm quality from large investors. Variable that cap-

tures this stage is the increase from the midpoint of the price range to the offer price

3. The offer price usually is announced shortly preceding the offer, and during the first day of trading the stock price typically changes significantly.

4. Shares are traded on a stock exchange, we measure one year abnormal return of the stock following the IPO (net of first day return).

3 Data

The data on IPO issues have been taken from the SDC Global New Issues; the variables are the date of the offer, the range of the indicative filing price from the underwriter, the actual offer price, the closing price at the offer date, one year stock performance and corresponding change of market indices, underwriting bank of each IPO. These data were supplemented with statistics of acquisition activities of IPO firms within three years following IPO from SDC Mergers and Acquisitions database. The matching variables of firm characteristics and performance are from Compustat and CRSP databases. In particular, the stock prices within three trading days during the acquisition announcement (starting with the return on the day before the announcement) and the value- and equally weighted market return indexes are from the CRSP listings. Firm specific performance measures are taken from Compustat: total Assets, net Sales, Cash and Short term investments, Debt, total Common equity, Price (close calendar year) and Common shares outstanding.

The data sample includes firms that went public in 1992 - 1993, which gave, after excluding unit offerings and close end investment funds, a sample of 1176 companies. The choice of the time period is such that it allows to investigate stock reactions to acquisitions within three complete years following IPO, and yet to avoid including announcements during the period of the bubble. After excluding companies for which the data were missing in Compustat or no matches were determined in CRSP, the sample is reduced to 685 companies. For these companies, there were

1759 acquisition announcements identified from the SDC MA database. These events comprised the sample for the test on abnormal returns due to acquisition announcements following IPO.

We calculated cumulative abnormal returns using the methodology as in Grullon, Michaely, and Swaminathan (2002): abnormal stock price reaction to acquisition announcement defined as the sum of differences between the stock return and weighted market return over a three days window.

$$CAR_i = \sum_{t=-1}^{1} (r_{i,t} - r_{m,t})$$

As the market return variable, we employed five alternatives: value-weighted and equally weighted NYSE/AMEX returns, with and without dividend payments, and the S&P 500. The regression results are very similar for all five specifications of the benchmark return. For the value-weighted NYSE/AMEX (with dividend payments) index, the cumulative three day abnormal return series has maximal value of 80.36%, minimum -73.70%, and the mean is 1.47%. Abnormal return series have leptokurtic distribution with negative skewness.

The market to book ratio was defined as Assets Total, less Common Equity, plus the market value of all shares outstanding at the end of calendar year, divided by Assets Total. The variable used to evaluate price adjustment during bookbuilding was the revision variable as in Cornelli and Goldreich (2000). It is defined as

$$Revision = \frac{OfferPrice - IndicativeLow}{IndicativeHigh - IndicativeLow}$$

By definition it is 0.5 if the price is set at the middle of the price range, zero if the price is set at the lower bound of the indicative price range and one if the price is set at the upper bound. The variable takes values below zero and above one when the issue is priced outside the initial range. Upward revision dummy is one if Revision is greater than one, and zero otherwise. The underwriter reputation variable of Loughran and Ritter (as modified and updated in Carter and Manaster and Carter, Dark and Singh ratings) was obtained from Jay Ritter's web site. We adopt Internet and technology dummy specification as in Loughran and Ritter (2004). The descriptive statistics for main variables are presented in Table 1.

[Insert Table 1 Here]

The correlations of main variables is presented in Table 2. Firm age is positively associated with stock performance during first year following IPO, negatively with price revision and underpricing (that captures lower uncertainty associated with older firms), positively with the reputation of the investment bank, negatively with the number of acquisitions within three years following IPO and with the returns at dates of such announcements; older firms fall into the Tech category less often.

[Insert Table 2 Here]

The variable of interest, cumulative abnormal returns on acquisition dates, is negatively associated with firm age and with first year stock performance, positively with bookbuilding revision and underpricing, negatively with the underwriter prestige and with the number of acquisitions within three years post-IPO, and positively with the technology sector dummy. The Tech dummy correlations show that high-tech companies are younger, have lower average first year return, experience more (upward) revision during bookbuilding and first day of trade, go public with more reputable investment banks, have higher abnormal returns on acquisitions, and acquire less often. Underwriter's quality is positively associated with age, sales, and assets, which seems to cause the multicollinearity observed when including these controls in the regressions.

4 Empirical Tests and Results

The ultimate goal of the conducted tests was to empirically determine the periods within which the existence of empire building ambitions of CEOs reflects in the pricing of firm's shares. The main hypothesis is that, due to market efficiency and due to the distinct motives of the empire builders, already at the IPO stage the pricing should reflect the agency problem of empire building.

We assume that, if corporate management has empire building ambitions then this fact will be revealed to the market, for instance, through particular characteristics of the acquired targets, and then there will be negative reaction to the announcements of large acquisitions initiated by this company. Thus, as the measure of empire building problem, we have employed cumulative abnormal return at acquisition announcements, which is a dependent variable in our main regressions. Hence, we investigate the interplay between the stock price adjustments before and after the date IPO and the stock price reaction on corporate acquisition announcement within three years following IPO.

The first observation is that in our sample the well established phenomenon of partial adjustment (Hanley (1993)) is highly significant economically and statistically: the higher the offer price is raised relative to the indicative price range, the higher the first day price increase is. In Table 1 this corresponds to the Bookbuilding adjustment variable and the Dummy of offer price being above the initial range. Higher underwriter reputation and firm age are associated with lower underpricing (Table 3).

[Insert Table 3 Here]

To test the hypothesis of high market efficiency in revealing the empire building during IPO, as the dependent variable we use the cumulative abnormal returns over a three day window. In this regression, I tested whether the measures of stock price changes at such stages as bookbuilding, first day of trade and subsequent trading (one year abnormal returns, and also three and five year stock dynamics) are able to predict successive CAR on the days of acquisition announcement. Variables corresponding to Firm Age, Cash and Short-Term Investments, Net Sales were used as controls in various specifications of the regressions. The total number of acquisitions within three years following IPO, and insider ownership before and after the IPO date were also checked for explanatory power.

The regression we run in the general form includes the following variables (after dropping

insignificant controls):

$$\begin{aligned} CAR = \alpha + \beta_1\ Rev + \beta_2\ Rev\ UW + \beta_3\ UP + \beta_4\ UP\ D_{TECH} + \beta_5\ AR_{1YR} \\ + \quad \beta_6\ AR_{1YR}\ UW + \beta_7\ AR_{1YR}\ D_{TECH} + \gamma_1\ Age + \gamma_2\ Age\ D_{TECH} + \\ + \quad \gamma_3\ D_{TECH} + \gamma_4\ UW + \gamma_5\ UW\ D_{TECH} + \gamma_6\ NumAcquis \end{aligned} \tag{1}$$

The following variables were found to be highly significant in explaining the abnormal returns: revision of the price during bookbuilding, underwriter reputation, first year abnormal returns, as well as technology sector dummy and firm age (in interaction with other variables). At the same time, the relation between the first day underpricing and CAR is insignificant. Sales, assets and cash are insignificant and cause multicollinearity (not shown). The results are reported in Table 4.

[Insert Table 4 Here]

For the analysis of information efficiency regarding the empire building problem, let us note that price changes during bookbuilding and first year of trading at an exchange have statistically significant predictive power, whilst underpricing is not related to the abnormal returns. To evaluate the economic effect of these two significant variables, it is important to distinguish between the cases of high and low prestige underwriters (we employ lowest and top quartile values of the investment banks ranking for this purpose). For coefficients estimated, the price revision by low prestige underwriters has influence on CAR of about negative *five* percentage points in the case of significant upward price revision (evaluated for top quartile of Revision variable). The same values for highest quartile of underwriters are much smaller in magnitude (not exceeding 0.4%). Influence of changes in first year abnormal return has magnitude from 0.4% to 1.1%, where the latter (more pronounced) effect again appears in the case of firms who went public with lowest prestige underwriters and who experienced stock price increase during the first year. At the same time, for intermediate values of the prestige score, the influence of these two price change variables is small.

Higher underwriter reputation is associated with lower abnormal returns at acquisitions (variable UW Reputation), which suggests that empire building problem appears more often in companies that went public with more reputable banks. This can be explained by the tendency of older and more established firms (larger sales, cash and assets) to go public with more reputable banks (recall positive correlations with underwriter rank). The surprising result is that lower prestige underwriters are in fact more strict in relation with the empire building syndrome, scrutinizing managers that might be potentially prone to this problem already at the bookbuilding stage. This follows from the analysis of the total effect of Revision variable and its interaction term with the UW Reputation. Low abnormal returns appear in the cases of companies that went public with low prestige underwriters who increased the offer price most substantially relatively to the initial price range. This suggests that low reputation underwriters set initial price range too conservatively (relatively to higher prestige underwriters), and then during bookbuilding, the institutional investors push the offer price higher, to the level of market consensus. And, as in our sample we do not find such a significant relation of abnormal returns with later price corrections, this means that the price is set quite adequately during the bookbuilding process, i.e., it reflects, amongst other aspects, the empire-building problem.

This leads to an interesting conclusion regarding the value of reputation: smaller and less prestigious underwriters are overly strict with firms whose management can have free cash flow problems, and initially set the indicative price well below the price that institutional investors consider to be fair for a given stock. This is possibly done due to precautionary motives: thus the risk of costly litigations with dissatisfied buyers of issued securities is lowered, as the 'objective' information from the market participants 'forces' the low prestige underwriter to raise the offer price above his own estimates. On the other hand, motives for accumulating reputation capital can be more important for smaller banks, while larger banks have greater conflict of interests between underwriting and trading divisions.

This interpretation is further supported by the relevance of high-tech dummies. Tech dummy

is related to higher average CAR, but this effect is relevant only for young technology sector companies and those high-tech firms that went public with less prestigious underwriters. The importance of age is straightforward to interpret: young technology companies have more growth options that expire with age, hence, CAR become lower for older firms. The coefficient on Tech*UW has the following interpretation: while technology firms have more growth options and should acquire more, higher prestige banks are associated with management being more prone to build empires. Hence, for higher bank ranking, the empire building effect distorts, on average, the growth options motive for investing and expanding. Alternatively, the coefficient on Tech*UW can be analyzed along with that of UW: while higher bank ranking is associated with more negative stock price reaction at acquisitions for non-technology sector firms, this effect more than triple for the technology companies. The interpretation of this fact is that technology firms are harder to evaluate (and to detect the empire building problem) in general. Thus, if more reputable banks have a less strict policy for stock pricing when signals on potential empire builders reveal, the magnitude of the problem increased for technology sector firms. We refer to the Robustness section where we rerun the regression on a sample without technology and Internet firms to check that overall results are not driven by this sector only.

As has been shown above, besides the Revision variable, another important predicator of CAR at acquisition announcement days are first year abnormal performance series. In regression *(1)*, one year performance is negatively associated with CAR for firms went public with low prestige underwriters, and positively associated for the case of highly reputable banks. Similarly, in regression *(2)*, one year abnormal stock performance following IPO, is negatively associated with CAR for younger firms, and positively associated for older firms. The interaction coefficient for abnormal return and age is only marginally significant, but when the regression was modified to account separately for high-tech and non-technology companies (not shown), the effect turned out to be due to the technology firms: abnormal return variable lost any significance for non-tech corporations, while estimates for high-tech companies have significance better than 0.1%.

It is straightforward to conjecture that interchanging firm age and bank reputation leads to similar pattern because underwriter's reputation in the context of first year performance refers to information asymmetry regarding the company going public. In our sample, underwriter's rank is positively associated with age, sales, cash earnings, leverage, and negatively associated with the incidence of delisting and insider shareholding, clearly suggesting that firms that go public with prestigious banks, bear lower level of information asymmetry. Then, in the analysis of one year returns, the results in *(1)* and *(2)* have the following interpretation in the context of technology sector: when managers of younger firms (or firms with higher asymmetry) observe positive evaluation of their post-IPO performance (excellent stock dynamics, among other measures), they can gain overconfidence about own abilities and growth prospects. (This regularity holds also for the non-tech firms - only regarding the interaction of one year return with the underwriter's quality.) This triggers corporate management to acquire and expand more actively - that is, over the optimal level. Hence, due to such overoptimism, they expand too much, causing negative returns following acquisition announcements. Such tendency declines with the firm age, as the management of mature firms already has had experience of other growth periods within their firms, and the increase in their optimism following good stock performance will be rather modest and adequate.

The effect can be two-fold: besides naive over-optimism regarding firm prospects and the desire to exploit the right momentum for perceived high NPV projects, management of young firms that perform well after IPO can interpret this success as solely their own achievement. Thus, they can demand more compensation for it, which, beyond bonus payments, can refer to expanding the scope of control, building 'empires' and, hence, related perquisite consumption. In other words, good first year performance may trigger the empire building problem within management of young firms.

5 Robustness Checks

For the purposes of robustness checks, and due to the high relevance of the Tech dummy in the above regressions, the tests were rerun on the sample excluding technology firms. This was done to make sure that the findings regarding information revelation of empire building problem are not driven by the technology sector. The results (specification *(3)* in Table 4) have demonstrated identical pattern of influence of the revision variable (being now significant at more than 0.1% level), irrelevance of the first day return variable, and marginal significance of the first year returns in the same direction as before. Thus, the sample without the high-tech companies demonstrates high market efficiency with respect to the free cash flow problem, and, in fact, most of the relevant information is revealed exactly at the pre-IPO stage, while the first year performance has lower relevance for our measure of the empire building problem.

As an alternative to the empire building measure of CAR, we use the market to book ratio dynamics over five years following IPO (regression *(4)*). The intuition is that a corporation with empire building problem will experience deterioration of the market to book ratio compared to value-maximizing companies. This will be the case for managers who build empires rather than create value: whenever the book value of assets increase during acquisitions, the market valuation of the company will not increase as much as would be the case for value-maximizing mangers. Thus, in the long run the market to book ratio will deteriorate, as compared to value-maximizing companies. So, as an additional test, we relate the pricing during IPO to the dynamics of the market to book ratio over five years following the year a company went public. Clearly, the CAR measure has superior theoretical grounds to be a more reliable variable that captures the empire building problem, as the market to book ratio dynamics over five years incorporates influence of many other factors of corporate performance. Nonetheless, the market to book regression generally supports the results obtained with CAR, particularly, the relation to long-term performance of the revision variable and one year abnormal return in their interaction with the underwriter's quality and firm age.

6 Conclusions

The results obtained on the current sample give us ground to conclude that the efficiency of detecting empire builders in firms that go public is fairly high. Information regarding the empire building problem is mostly revealed already at the initial IPO stage, namely, during the evaluation of the indicative price range by the underwriter, and also during the bookbuilding period. This efficiency seems to be lower in the case of high-tech young companies that go public with low prestige underwriters: in this case, first year abnormal return adds some more information on empire building.

Another interesting finding is the treatment of reputation capital by investment banks: the results suggest that higher prestige underwriters set indicative price range and offer price that account adequately for the empire building problems. Low prestige banks over-cautiously set the indicative price range for companies with potential free cash flow problem at a very conservative level. This can be done in order to either raise their own reputation or to avoid possible litigations in cases of unsuccessful performance of the firms they take public. Put it differently, less reputable banks have stricter policy with respect to empire building, whilst reputable banks, who are also motivated to provide services beyond underwriting, do not apply overly strict policy to potential empire builders.

The third important finding is that management of firms with larger information asymmetry (younger firms and firms that go public with less prestigious banks), is more prone to over-invest if first year performance was good, and this effect is especially significant for technology and Internet sector firms. Above-average performance during the first year post-IPO either leads to managerial overconfidence or triggers empire building problem within executives of less mature firms.

Table 1: Descriptive Statistics

Variable	*mean*	*median*	*st. deviation*
CAR	1.472	1.258	8.798
Age at IPO	16.9	9.0	21.2
Sales, mln $	207.5	61.4	1029.2
Underwriter Prestige	7.1	8.1	2.2
Revision	0.44	0.50	1.16
Underpricing	11.7	5.4	18.2
One year AR	17.29	2.86	83.66
Num of Acquisitions	3.1	2	2.89

Table 2: Partial correlations of main variables.

	Age	1yr AR	Revis	UP	UW	CAR	#Acq	Tech
Age	1	0.03	-0.09	-0.15	0.19	-0.02	-0.06	-0.15
1 yr AR	0.03	1	-0.09	0.05	0.03	-0.08	0.09	-0.01
Revision	-0.09	-0.09	1	0.42	0.05	0.01	0.04	0.08
Underpricing	-0.15	0.05	0.42	1	-0.09	0.03	0.03	0.15
U'writer reputation	0.19	0.03	0.05	-0.09	1	-0.09	0.01	0.04
CAR	-0.02	-0.08	0.01	0.03	-0.09	1	-0.02	0.03
# Acquisitions	-0.06	0.09	0.04	0.03	0.01	-0.02	1	-0.10
Tech	-0.15	-0.01	0.08	0.15	0.04	0.03	-0.10	1

Table 3: Standard results on partial adjustment in IPO underpricing.

Dependent variable: First Day Return.

Variable	*Estimate*
Bookbuilding adjustment	0.335***
Underwriter Reputation	-0.858***
Company Age	-0.085***
Offer Price above Range	7.955**

* p<0.10, ** p<0.05, *** p<0.01

Table 4: Determinants of Abnormal Returns at acquisition announcement dates.

Variable	*(1) CAR*	*(2) CAR*	*(3) CAR NonTECH*	*(4) Q*
Intercept	4.28**	4.13***	3.73*	56.1*
Revision	-4.26*	-4.16*	-6.82***	-85.7*
Revision*UW	0.53*	0.52*	0.85***	9.03*
UP	0.0001	-0.002	0.03	0.1
UP*Tech	0.045	0.034		0.03
1 yr AR	-0.025*	-0.013**	-0.017*	-0.47*
1 yr AR* Tech	-0.023*			-0.64***
1 yr AR * UW	0.004**		0.003*	0.06*
1 yr AR * Age		0.0005*		
Tech	10.93***	10.59***		358.7***
Tech * Age	-0.32***	-0.30***		-2.75*
Tech* UW	-0.96*	-0.96**		-34.2***
UW	-0.46*	-0.39*	-0.57**	-7.5*
Age	0.019	-0.01	0.63	-0.17
R^2	9.0%	8.0%	4.2%	13.0%

* p<0.10, ** p<0.05, *** p<0.01

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